The North Carolina Wetlands Restoration Program 2001 Annual Report

Stream Restoration Plan
For Hominy Swamp Creek

The North Carolina Department of Environment and Natural Resources
Division of Water Quality
November 2001

Department of Environment
and Natural Resources
North Carolina Wetlands Restoration Program

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November 1, 2001
Fiscal Year Report 2000-2001

This document has been approved by:

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Date: 15 Nov 01

This document has been prepared to fulfill the annual reporting requirements of the N.C. Wetlands Restoration Program (NCWRP) as described in N.C.G.S. 143-214.13. The NCWRP Annual Report describes activities conducted between July 1, 2000 and June 30, 2001.

Executive Summary

The North Carolina Wetlands Restoration Program (NCWRP) has made significant progress toward fulfilling program goals during the 2000-2001 fiscal year. With activities spanning watershed restoration planning, project implementation and fiscal management, the program continues to increase the ecological effectiveness of restoration activities and to ensure consistency in addressing restoration requirements. Solid planning initiatives and projects implemented based on those initiatives help the program realize its mission to improve water quality, increase floodwater retention, protect habitat and increase recreational opportunities through the restoration, creation, enhancement and preservation of wetlands, streams and riparian buffers. This report highlights actions taken during fiscal year 2000-2001 to fulfill the program's mission and meet the program's goals.

Progress in Watershed Restoration Planning

The NCWRP continues to apply planning tools to identify ecologically effective projects. The program's primary planning efforts are the development of Watershed Restoration Plans for each river basin in the state, and the implementation of Local Watershed Planning initiatives in selected watersheds. Important accomplishments during this past fiscal year in the area of watershed restoration planning include:

- The update of Watershed Restoration Plans for the New, Catawba, Roanoke, French Broad, Cape Fear and Tar-Pamlico river basins.
- The redesign of the Watershed Restoration Plans to streamline information and to more effectively communicate the goals of the documents.
- The successful implementation of the first Local Watershed Planning Initiative in New Hanover County.
- The initiation of 10 additional Local Watershed Planning initiatives across the state.

Progress in Project Implementation

The rate of project implementation has been steadily increasing within the NCWRP. Advances during the last fiscal year in this area include:

- Sixty restoration projects in some phase of implementation, located in every physiographic region of the state, 11 river basins and 30 counties that will result in the restoration, enhancement and protection of 595 acres of wetlands, 166,000 linear feet of stream and 272 acres of riparian buffer.
- Twenty-one of these projects, resulting in 224 acres of wetlands, 64,132 linear feet of stream, and 160 acres of riparian buffer restoration, have been constructed or are in the final design phase.
- Seventy-three percent of all projects have been sited within Targeted Local Watersheds.
- Protection of 1,260 acres of wetlands and riparian buffers and 57,354 linear feet of streams through permanent conservation easements in nine river basins throughout the state.

Streamlining the Permitting Process

- The NCWRP continues to be a voluntary compensatory mitigation option for many private citizens and public agencies across the state. Approximately 44 percent of the permittees that were required to mitigate for impacts chose to satisfy the requirement through payment to the Wetlands Trust Fund. Of those that chose that option, 42 percent of impacts were issued to the private sector and 58 percent were issued to government agencies.

- Stream mitigation requirements accounted for 86 percent of payments to the Wetlands Trust Fund, riparian wetland mitigation requirements totaled 12 percent, and non-riparian wetland mitigation requirements totaled 2 percent.

Mitigation requirements accepted by the program this fiscal year

- Stream: 79,503 linear feet
- Wetland: 73 acres
- Buffer: 37 acres

Cumulative mitigation requirements accepted since inception of the program

- Stream: 177,377 linear feet
- Wetlands: 205 acres
- Buffer: 41 acres

Improvements in Data Management

A database has been developed to track various activities of the NCWRP. The database has been designed to improve the ability to report on distinct components of the NCWRP and will generate invoices, receipts, project progress, and document various categories of expenditures related to wetland and riparian restoration projects. The database allows read-only access to multiple viewers and can be linked to the 401 Wetlands Certification database. In addition it will be used to:

- Record compensatory mitigation requirements accepted by the program.
- Track progress of restoration projects designed to mitigate for specific impacts by cataloging unit.
- Simplify report preparation and retrieval of information.
- Allow cost analysis of restoration projects.

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Section 1. The NCWRP's Watershed Approach to Project Site Selection

Introduction

Millions of dollars are spent every year in North Carolina to compensate for impacts to streams, wetlands and riparian buffers from various development activities. The rate and extent of growth and development in North Carolina portends that impacts will continue to occur and that compensatory mitigation will continue to be required. Given this reality, compensatory mitigation projects should be implemented in a manner that benefits the environmental resources of North Carolina. The North Carolina Wetlands Restoration Program (NCWRP) uses monetary resources (including compensatory mitigation dollars) to implement ecologically beneficial projects that are identified using a watershed planning approach and project feasibility analysis. This section describes how utilizing a watershed approach to implementing compensatory mitigation projects provides greater environmental benefits and how the program uses this approach for project identification.

Watershed Planning for Better Project Identification

Compensatory mitigation projects have traditionally been selected in relation to their proximity to the development project and the ability of the project to replace the same type of resource lost (i.e. bottomland hardwood forest or piedmont wetland). Linking watershed planning to compensation for impacts from development not only allows for project selection and location to be driven by ecological needs, but also fosters the concentration of projects for greater environmental benefit. Figure 1-1 illustrates the difference between traditional compensatory mitigation project site location and the watershed approach to site identification and location.

In the figure, the impact area is identified by cross-hatching. This represents the location of the permitted impact. Under the traditional approach to mitigation, available land with certain characteristics in the vicinity of the impact is identified and analyzed in terms of restoration project potential. For example, prospective site identification may focus on hydric soils that have been converted to cropland. Those projects that are available and feasible are implemented. The locations of these projects are represented by triangles in the figure. As illustrated, these projects can be located in several different watersheds.

Alternatively, the watershed approach identifies and locates projects in the context of an ecological framework. Figure 1-1 illustrates this by showing the location of a watershed that has been targeted based on need for restoration. In this case there is water quality impairment, waters 'not supporting' their use, and the locations of compensatory mitigation projects within that watershed are depicted with stars.

The watershed planning approach:

- Addresses impacts from non-point source pollution;
- Concentrates projects in a watersheds with restoration needs;
- Encourages strategic location of projects targeted for water quality and habitat improvements;
- Emphasizes local stakeholder concerns; and
- Integrates compensatory mitigation projects with ongoing local initiatives.

The benefits of this approach are gaining momentum nationally as well. A recent publication entitled Compensating for Wetland Losses Under the Clean Water Act (National Academy of Sciences, National Academy Press, 2001) provides further justifications and arguments in favor of watershed planning in support of compensating for impacts to wetlands and streams.

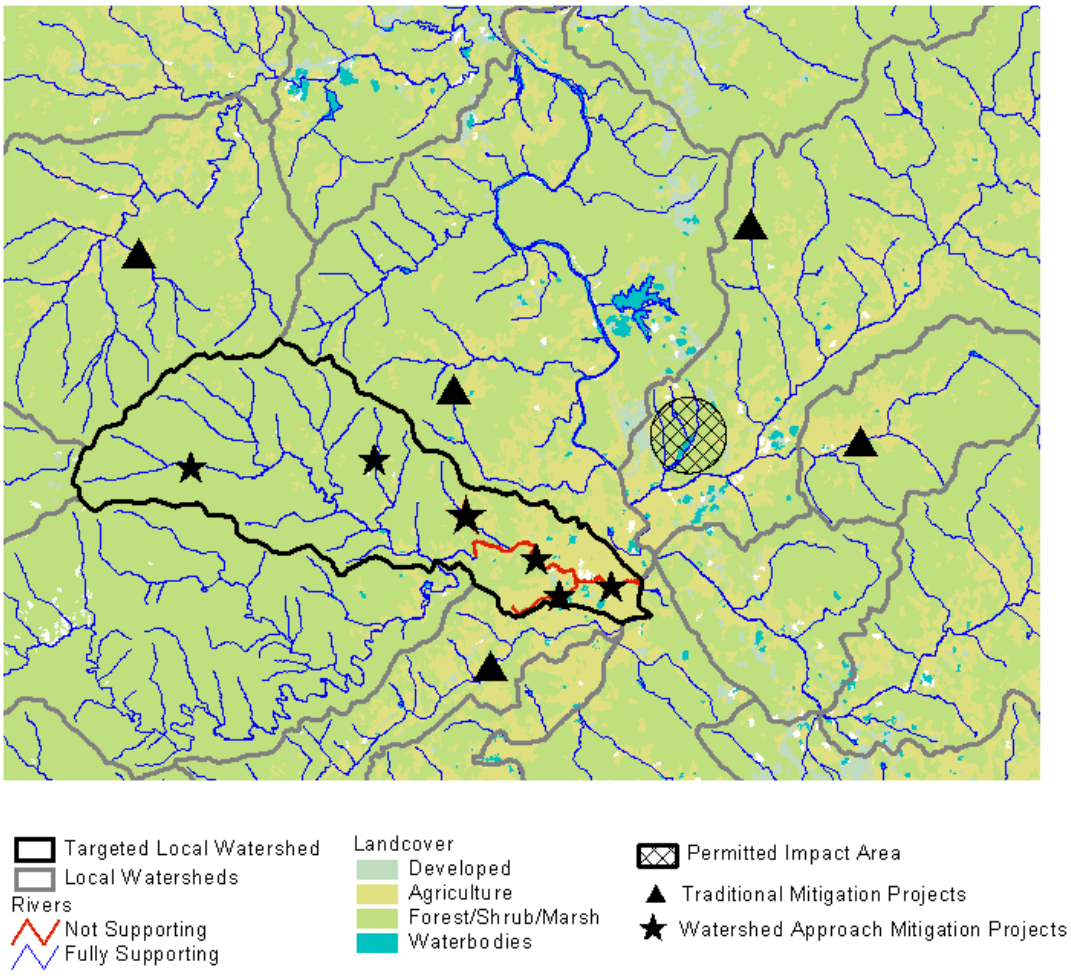


Figure 1-1. Traditional compensatory mitigation versus the watershed approach to mitigation.

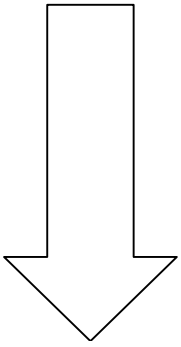
From Planning to Implementation

The N.C. Wetlands Restoration Program uses two watershed-planning approaches to identify high quality restoration projects. This section describes how Watershed Restoration Planning and Local Watershed Planning each result in environmentally beneficial projects and how one effort builds off of the other. Overall, the planning initiatives of the program can be viewed as moving from general river basin information to site specific project feasibility.

Watershed Restoration Planning

The Watershed Restoration Plans focus on targeting local watersheds (14-digit hydrologic units) based on their need and opportunity for restoration projects (Section 1, NCWRP 2000 Annual Report, available at http://h2o.enr.state.nc.us/wrp/index.htm). Watershed plans lead to the implementation of environmentally beneficial restoration projects.

Watersheds targeted for each river basin



Projects address specific needs within Targeted Local Watersheds

The Watershed Restoration Plan developed for each river basin identifies local watershed target areas, incorporating:

- Land use evaluations;
- Water quality and habitat data; and
- Information from local resource professionals.

Compensatory mitigation requirements for permitted impacts are accepted by the program.

Implementation staff refer to the Watershed Restoration Plans and search for restoration opportunities within the target areas.

Implementation staff investigates potential projects on the ground and evaluate feasibility and environmental benefits of restoration.

The project is implemented if benefits and costs are reasonable.

Local Watershed Planning

As described in the NCWRP Annual Report for 2000, the program has resources to engage in detailed watershed planning in some watersheds in the state. Targeted Local Watersheds identified in the Watershed Restoration Plan are investigated for their need and opportunity for multiple restoration projects. A watershed study includes an assessment of the watershed to identify the causes and sources of the problems. This leads to the identification of projects that specifically address the problems in the watershed (water quality, habitat loss, flooding). The environmental benefit of the projects can be projected, allowing resources to be directed toward efforts that will provide the greatest benefit. Information generated during the watershed study can be used not only to identify the best projects to meet compensatory mitigation requirements, but also to identify other initiatives or projects that can be implemented to benefit the ecology of the system. In this sense, the watershed that is the subject of a Local Watershed Planning initiative can attract additional environmental protection and improvement efforts. A variety of strategies concentrated in a single area results in meaningful progress to address watershed issues such as nonpoint source pollution, habitat degradation and stormwater management.

Watershed Restoration Planning in the White Oak River Basin

The White Oak River basin provides a good example of the way the watershed planning initiatives unfold in a particular area. This basin contains significant environmental resources but also experiences problems such as closed shellfish harvesting waters, habitat degradation and nonpoint source pollution adjacent to urbanized areas. A watershed restoration plan for the basin identified

targeted local watersheds. Program staff began considering potential project opportunities within the targeted areas. Contacts with local resource professionals revealed a number of ongoing water quality initiatives. The NCWRP was able to identify initiatives within targeted watersheds and augment those efforts. Figure 1-2 provides a map that shows the location of these projects within the river basin and Targeted Local Watersheds. Although the restoration projects are not concentrated in one particular watershed as illustrated in the example in Figure 1-1, they are part of larger partnerships by other entities that can generate the same effect. These partnerships are highlighted in the project descriptions that follow the map.

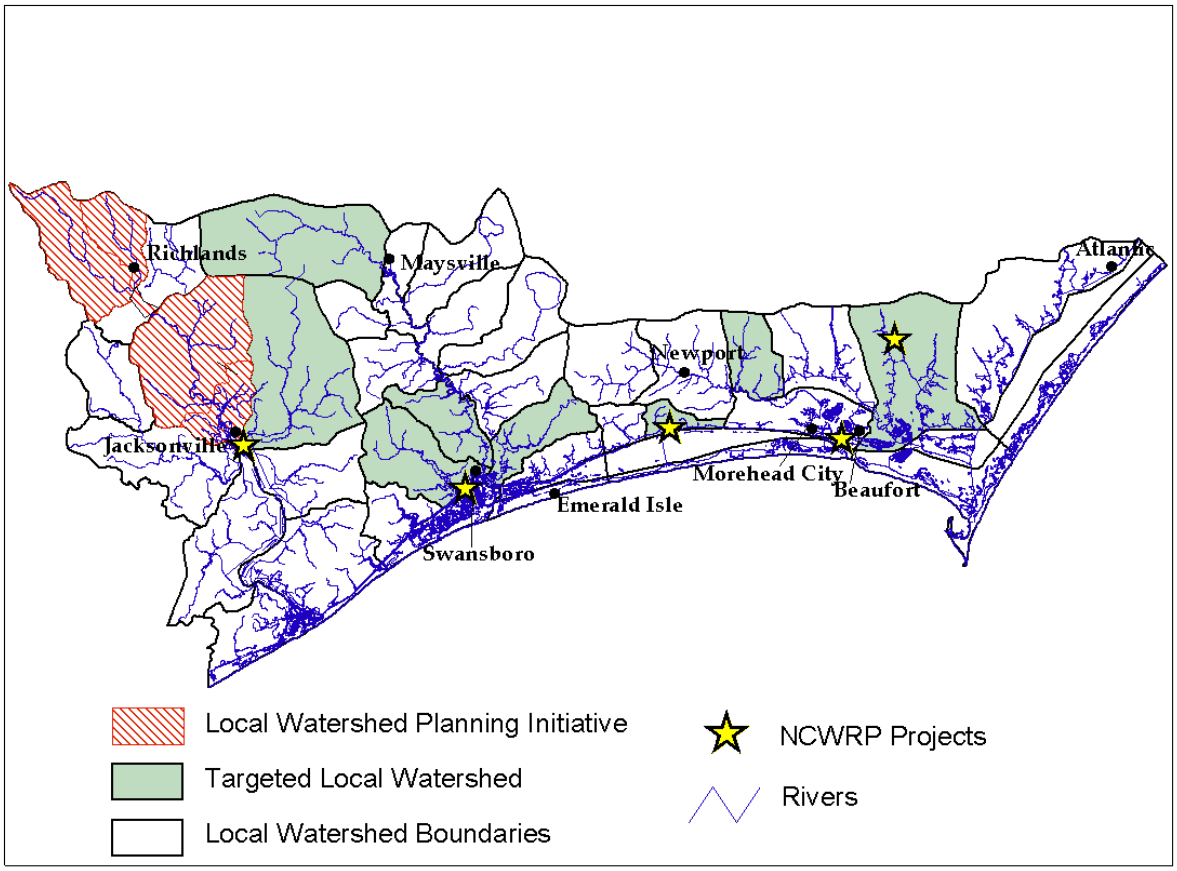


Figure 1-2. Map of the White Oak River basin in eastern North Carolina highlighting targeted watersheds and NCWRP projects.

Description of NCWRP Projects in the White Oak River Basin

April 2000

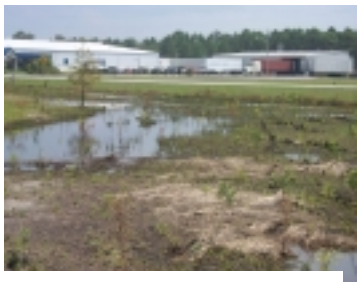
North River Farm (project assessment/design phase)
Project type: wetland restoration
Activities: acquisition by Coastal Federation with Clean Water Management Trust Fund grant, design and implementation of bottomland hardwood, freshwater marsh and brackish marsh (by NCWRP); apply natural channel design to channelized streams/ditches
Water Quality benefits: reduction of peak flows and added retention and treatment of waters prior to entering the estuary.

March 2000

Maritime Museum
Project type: shoreline stabilization, salt marsh restoration
Activities: funding with EPA grant, demonstration on the use of alternative methods other than bulkheading for shoreline stabilization; replanting of eroding shoreline
Water Quality benefits: reduces sediment and nutrient loads into the estuary

February 2000

Carteret Craven Electric Cooperative
Project type: wetland restoration
Activities: watershed analysis headwater wetlands restoration, channeling flow into restored wetlands
Water Quality benefits: reduce peak flows and increase stormwater retention to reduce nutrients and lower freshwater inputs into Jumping Run Creek to reopen closed shellfish waters. Part of a watershed effort involving NC State University, DWQ's 319 program, and the NC Clean Water Management Trust Fund. Project will reduce Nitrogen loading by 210 pounds/year and phosphorous loading to Jumping Run Creek by 8 pounds/year.



August 2000

August 2000

Hammocks Beach State Park
Project type: wetland creation/restoration
Activities: removal of existing, failing bulkhead; planting of marsh
Water Quality benefits: restore buffer on shoreline; increase important spawning habitat within salt marsh. Partnering with the N.C. Coastal Federation and the state park.

May 2001

June 2000

Sturgeon City
Project type: wetland restoration
Activities: restoration of brackish marsh and buffers on Wilson Bay
Water Quality benefits: shoreline stabilization and increased buffer widths to reduce runoff, increase nutrient absorption and contaminant adsorption from surrounding urban area and is part of a larger effort to clean up Wilson Bay. Partners include the City of Jacksonville, DWQ 319 Program and the NC Clean Water Management Trust Fund.

August 2001

Another feature highlighted on the map is an upcoming Local Watershed Planning effort. Before the end of calendar year 2001, the NCWRP will initiate watershed planning in the upper New River in Onslow County. These areas have been identified as having water quality and habitat problems that could benefit from both a technical assessment that will pinpoint the sources of the problems as well as restoration activities and other projects that will address the identified problems.

Section 2. Program Progress

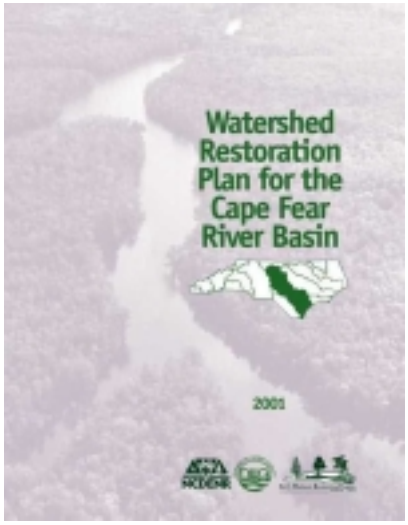
Planning Initiatives

Introduction

The NCWRP has two planning initiatives that foster the identification of ecologically effective restoration projects. One effort is the development of restoration plans for each river basin to identify those areas that have the greatest need and opportunity for restoration. The other effort is called Local Watershed Planning where an in-depth technical analysis is done in specific watersheds in concert with stakeholder involvement to develop a comprehensive package of recommendations to improve and protect water quality and habitat.

Watershed Restoration Plans

Building on plans developed for 17 river basins at the inception of the program, staff completed The Watershed Restoration Plan updates for six river basins – the French Broad, New, Catawba, Tar-Pamlico, Cape Fear and Roanoke. Moving into this phase of updating plans, the program looked for ways to improve the documents themselves as well as the planning process. The following actions were taken toward plan improvement:



In addition to the name change, the plans have a new look.

The title of the plans was changed from Basinwide Wetlands and Riparian Restoration Plans to Watershed Restoration Plans.

The format of the plans was streamlined. The new format incorporated background information presented in the earlier plans into a document entitled Guide to the NCWRPs Watershed Restoration Planning Strategy (version 1) (also referred to as the 'Planning Guide'). This document is intended to complement the individual plans for each river basin, that are now more focused on basin-specific data and information.

The system used to prioritize watersheds with respect to restoration need and opportunity continues to evolve and improve. Prioritization is moving toward more focus on Targeted Local Watersheds (14-digit hydrologic units) within a river basin where NCWRP resources are focused to address water quality and habitat issues. Updated Watershed Restoration Plans and the 'Planning Guide' are available through the NCWRP web site. *http://h2o.enr.state.nc.us/NCWRP/index.htm*.

During the next year the program will continue to improve the process of targeting watersheds with high need and opportunity for restoration as well as the method of communicating those targets. Improvement plans include:

The development of an 'automated system' of identifying a subset of watersheds that may be good candidates for targeting. Using Geographic Information System (GIS) data layers, the system will give points for the presence or absence of certain watershed characteristics such as impaired water quality, endangered species or water supply intakes. The system will allow planners to identify those watersheds that should be given further consideration for targeting. Promoting increased public/agency comments and participation through the presentation of Targeted Local Watersheds on the web site. The NCWRP intends to provide maps that will allow

the user to access certain areas of the state and obtain geographic information on targeted watersheds. Users will be able to access targets at the statewide level and will be taken to a specific river basin showing local watersheds with targets highlighted. From there users will be able to access targeted watersheds and retrieve a detailed map of that watershed. The information received from the interactive Targeted Local Watershed section of the NCWRP website will be useful to groups or individuals that need input on the location of targeted watersheds. For example, if a landowner were interested in participating in the program, he or she would be able to determine if their property was in one of the targeted watersheds. In addition, organizations interested in restoration projects or other water quality or habitat improvement projects could use information on whether the area is in a Targeted Local Watershed to either seek program assistance for project implementation or to bolster their case for receiving grant funds.

One important goal of the Watershed Restoration Plans is to share the location of watersheds targeted by the program with others in order to encourage partnerships. The NCWRP recognizes that restoration projects alone will not address nonpoint source issues, habitat degradation and other watershed concerns throughout a watershed. Partnering with other efforts such as those implemented by the Clean Water Management Trust Fund, the 319 program, and local governments will lead to greater success in improving and protecting water quality and habitat in North Carolina.

Local Watershed Planning

A detailed description of the Program's Local Watershed Planning Initiative can be found in the 2000 Annual Report (available on the web site at http://h2o.enr.state.nc.us/wrp/index.htm).. Pursuant to a Memorandum of Understanding with the N.C. Department of Transportation, the NCWRP will initiate Local Watershed Planning initiatives throughout North Carolina to improve the ecological effectiveness of Department of Transportation compensatory mitigation projects. At the time of the 2000 report, the Program had initiated a planning initiative in New Hanover County. Since then, Local Watershed Planning efforts have been initiated in ten other watersheds.

Utilizing the projected impacts of transportation improvement projects throughout North Carolina, specific regional watersheds (8-digit cataloguing units) were identified based on the magnitude of environmental impact. Within those large, regional watersheds staff worked to identify smaller watersheds with the greatest need and opportunity for restoration. These initial targets were derived from the appropriate Watershed Restoration Plan. Staff investigated additional factors including geographical proximity to projected impacts, local receptivity to watershed planning, and the presence of other initiatives or projects to address water quality issues to finalize draft local watershed plan (LWP) watersheds. Once a 'short list' of candidates had been identified, the staff convened a meeting of resource professionals within the Department of Environment and Natural Resources, other agencies, and selected local government personnel to seek feedback and gather additional information that could help narrow the focus. The following table presents information related to the areas that have been chosen for Local Watershed Planning during this reporting period.

Table 2-1. Local Watershed Planning Initiatives being undertaken by the NCWRP

Local Watershed Name*	Contact* / Plan Lead	Contractor Information	Stakeholder Involvement	Comments
Northeast Cape Fear, Cape Fear River Basin	Bonnie Duncan (919) 733-5315	KCI	NC State University, Watershed Education for Communities and Local Officials (WECO)	Initiated in September 2000
Lake Rogers & Ellerbee Creek, Upper Neuse River Basin	George Norris (919) 733-5312	N/A	TJCOG for UNRBA with additional in-house efforts	Working through the efforts of the Upper Neuse River Basin Association; Ellerbee 303(d) listed
Mud Creek, French Broad River Basin	Kristin Cozza (919) 716-1922	Tennessee Valley Authority- Additional work may be needed	Land-of-Sky – Mud Creek Council	NCWRP involvement began in December 2000
Troublesome and Little Troublesome Creeks, Upper Cape Fear River Basin	Hal Bryson (919) 715-7452	Tetra Tech, Inc.	WECO	Building on the efforts of the WARP project; On 303(d) list
Crane Creek, Middle Cape Fear River Basin	George Norris (919) 733-5312	Blue Land, Water and Infrastructure	WECO	On 303(d) list
McDowell, Long, Sugar / Irwin, Little Sugar, and McAlpine Creeks. Catawba River Basin	Jocelyn Elliott (919) 716-1921	CH2MHill	In-house coordination with City of Charlotte and Mecklenburg County	Working in partnership with the City of Charlotte and Mecklenburg County
Pasquotank River, Pasquotank River Basin	Bonnie Duncan (919) 733-5315	Landmark	NCWRP staff	
Clarke Creek and upper Rocky River, Lower Yadkin-Pee-Dee River Basin	Hal Bryson (919) 715-7452	Camp Dresser McKee	NCWRP staff	303(d) list
Lewis Fork, (north and south prong) Miller Creek / Tucker Hole, Warrior Creek, Upper Yadkin River Basin	Kristin Cozza (919) 716-1922	Request for Services issued on October 17, 2001	NCWRP staff	Helping local community address concerns about the quality of their water supply
Contentnea Creek	Jocelyn Elliott (919) 716-1921	N/A	NCWRP staff	Building on efforts of an EPA grant to address water quality impairment
Upper New River, White Oak River Basin	Bonnie Duncan (919) 733-5315	Will issue Request for Services by end of calendar year 2001	NCWRP staff	Designated Nutrient Sensitive Waters

Appendix E provides maps of each LWP watershed area within the Regional Watershed or 8-digit cataloguing unit.
All contacts can be reached by email at *firstname.lastname@ncmail.net*

Two of the program's Local Watershed Planning Initiatives have been under way for several months now. The New Hanover County effort, which began in September 2000, has made significant progress. A group of 15 active stakeholders representing a variety of interests in the watershed was convened and is meeting monthly to identify watershed priorities and management strategies. The group has learned about stormwater management and other pertinent issues that will allow them to develop the management plan when all of the technical assessment information becomes available. Sampling is being conducted by the University of North Carolina at Wilmington to measure water quality indicators. The consultant, KCI Associates of NC, is scheduled to complete their technical assessment of the watershed later this year. Stakeholders will use the information generated to make decisions about how best to address issues in their watershed. This effort will include the identification of potential projects that can not only meet compensatory mitigation needs but will further the goals they have defined for the watershed.

In the French Broad River basin, the program is building on existing efforts in the Mud Creek watershed that were initiated by local government officials in the City of Hendersonville. The watershed has been extensively sampled with a grant given to the Division of Water Quality by the Clean Water Management Trust fund to identify causes and sources of biological impairment. The results of that study are due early next year. In addition to the sampling, the program used Local Watershed Planning funds to conduct an Integrated Pollutant Source Identification (IPSI) method on the watershed. The IPSI method was developed by the Tennessee Valley Authority. The IPSI is a geographic database and set of tools designed to aid citizens and planners in implementing water quality improvement and protection projects. The results of this study are due by the end of the calendar year. This information will be used by a stakeholder group called the Mud Creek Council to develop a comprehensive watershed plan.

Implementation of Restoration Projects

The NCWRP currently has sixty projects in some phase of implementation (Table 2-2). These projects occur in each physiographic region of the state, eleven different river basins, and are located in 30 counties (Fig. 2-1). The effectiveness of the NCWRP planning initiatives is demonstrated by 73 percent of current projects being located within targeted watersheds (Table 2-2) thereby increasing the ecological effectiveness of the projects.

Eleven of these projects have been completed restoring 15.5 acres of wetlands, 25,364 linear feet of streams, and 63 acres of riparian buffer. Nine projects are in the final design/permitting stage and will be constructed in the next six months resulting in the restoration of 149 acres of wetlands, 32,800 linear feet of streams, and 60.3 acres of riparian buffer. These 20 projects will restore approximately 164.5 acres of wetlands and 58,164 linear feet of stream and 123.3 acres of riparian buffer. The remaining 40 projects will restore 431 acres of wetlands and 105,998 linear feet of stream and 149.1 acres of riparian buffer. Collectively, these projects will restore 595.5 acres of wetlands, 164,162 linear feet of stream, and 272.4 acres of riparian buffer.

Table 2-2. Restoration sites by river basin.

Map Index #	Project Name	Basin	Project ID	Priority Watershed	Wetland (acres)	Stream (linear feet)	Buffer (acres)	Project Status
24	North Pacolet River	Broad River	NPR/BR/01	Yes		2,300	2.6	2
54	Dixon Property	Cape Fear	DIX/CF/01	No		2,500	2.9	2
31	Hadley /Newlin Property	Cape Fear	HDNW/CF/01	No		4,500	5.2	2
56	McPherson Property	Cape Fear	MCP/CF/01	No		1,500	1.7	2
55	Pickett Property	Cape Fear	PIC/CF/01	No		2,000	2.3	2
32	Sydnor Property	Cape Fear	SYD/CF/01	No		5,000	5.7	2
20	Cross Creek	Cape Fear	CC/CF/01	Yes		2,000	5.0	3
58	Sandy Creek	Cape Fear	SC/CF/01	Yes	2.0			2
5	Price Park	Cape Fear	JP/CF/99	Yes		1,510	2.8	6
47	Benbow Park	Cape Fear	BEN/CF/01	Yes		1,200	1.4	3
45	Brown Bark Park	Cape Fear	BB/CF/01	Yes		2,630	3.0	3
48	Gillespie Golf Course	Cape Fear	GGC/CF/01	Yes		3,000	3.4	3
46	Hillsdale Park	Cape Fear	HILL/CF/01	Yes		5,000	5.7	3
23	Jumping Run Creek	Cape Fear	JRC/CF/01	No	75.0	5,500		4
22	Suck Creek	Cape Fear	SK/CF/01	No		1,300	1.5	4
4	Burnt Mill Creek*	Cape Fear	BM/CF/01	Yes	0.8			6
25	Pine Valley	Cape Fear	PNV/CF/01	Yes		2,500	2.9	2
17	Little Beaver Creek	Cape Fear	LBC/CF/01	Yes	10.0	5,000		4
3	Payne Dairy	Catawba	PD/CT/01	Yes	3.0	7,000	12.9	6
15	Brown Branch	Catawba	BB/CT/01	No		7,000	8.0	4
16	Wike Property	Catawba	WP/CT/01	No		2,300	2.6	4
44	Edgehill Park	Catawba	EDG/CT/01	Yes		1,500	1.7	3
33	Freedom Park	Catawba	FRD/CT/01	Yes		5,000	5.7	3
38	McIntyre Creek	Catawba	MCI/CT/01	Yes		2,500	2.9	3
35	Myers Park HS	Catawba	MYP/CT/01	Yes	2.0	2,000	2.3	3
36	Roslyn	Catawba	ROS/CT/01	Yes	3.0	1,500	1.7	3
34	Westfield	Catawba	WEST/CT/01	Yes		2,000	2.3	3
37	Whitehurst Road	Catawba	WHR/CT/01	Yes		1,000	1.1	3
11	High Vista	French Broad	HV/FB/01	Yes		3,500	4.3	4
21	Clear Creek	French Broad	CLC/FB/01	Yes		1,200	6.4	4
28	Ellerbee Creek	Neuse	ELL/NU/01	Yes		2,500	2.9	1
29	Hillsborough	Neuse	HILL/NU/01	Yes		1,500	1.7	3
26	Beamon's Run	Neuse	BR/NU/99	Yes			16.5	6
1	Howell Woods	Neuse	HW/NU/99	No	139		5.0	6

Table 2-2. Restoration sites by river basin.

Map Index #	Project Name	Basin	Project ID	Priority Watershed	Wetland (acres)	Stream (linear feet)	Buffer (acres)	Project Status
27	Whitelace Creek	Neuse	WLC/NU/01	Yes	20.0	8,000	10.0	2
12	Kentwood Park	Neuse	RSKP/NU/99	Yes		3,000	5.5	4
10	Smith/Austin Creek	Neuse	SA/NU/01	Yes		9,500	32	4
13	Chavis Park	Neuse	RS/NU/99	Yes		2,500	4.6	3
14	Bertie Creek	Neuse	RSBC/NU/00	Yes		1,200	2.2	3
43	Cheviot Hills	Neuse	CVH/NU/01	Yes		3,000	3.4	1
50	Wendell	Neuse	WEN/NU/01	Yes		1,200	1.4	1
60	Hominy Swamp Creek	Neuse	HS/NU/99	Yes		2,700	5.0	5
61	Brush Creek	New	BC/NW/99	No		4,000	7.3	6
52	Charles Creek	Pasquotank	CHR/PA/01	Yes	2.0	1,500	1.7	1
53	Knobs Creek	Pasquotank	KNB/PA/01	Yes	19.0			2
51	Spence Property	Pasquotank	SPN/PA/01	Yes	55.0			2
57	Snow Creek	Roanoke	SC/RN/01	Yes		3,000	3.4	2
18	Louisburg	Tar-Pamlico	LOU/TP/01	No		2,000	5.0	3
19	Bear Swamp Creek	Tar-Pamlico	BSC/TP/01	No		2,000	5.0	3
7	Jumping Run Creek	White Oak	JRC/WO/99	Yes	4.4			6
8	Maritime Museum*	White Oak	MM/WO/00	Yes	2.8			6
49	North River*	White Oak	NR/WO/01	No	250.0			2
59	Sturgeon City	White Oak	SC/WO/99	Yes	5.5			6
9	Hammock's State Park	White Oak	HB/WO/99	Yes	2.0			6
39	Brushy Fork	Yadkin	BF/YD/01	Yes		3,000	6.9	3
40	Mills Creek	Yadkin	MC/YD/01	Yes		3,000	6.9	2
30	Beaver Creek	Yadkin	BC/YD/01	No		4,000	9.2	3
2	Stone Mountain	Yadkin	SM/YD/99	No		10,622	19.5	6
41	Bugaboo Creek	Yadkin	BBO/YD/01	No		8,000	9.2	3
42	Warrior Creek	Yadkin	WC/YD/01	Yes		4,000	4.6	2
				Summary	595.5	164,162	272.4	

Project Status
1 Restoration Site Assessment 3 Initial Design (feasibility) 5 Construction Phase
2 Site Acquisition Phase 4 Design Phase 6 Post-Construction Monitoring
*These projects will not be used for compensatory mitigation requirements

NCWRP PROJECT LOCATIONS

2001

FIGURE 2-1

N.C. Wetlands Restoration Program
NCDENR DWQ

NCDENR
DIVISION OF WATER QUALITY

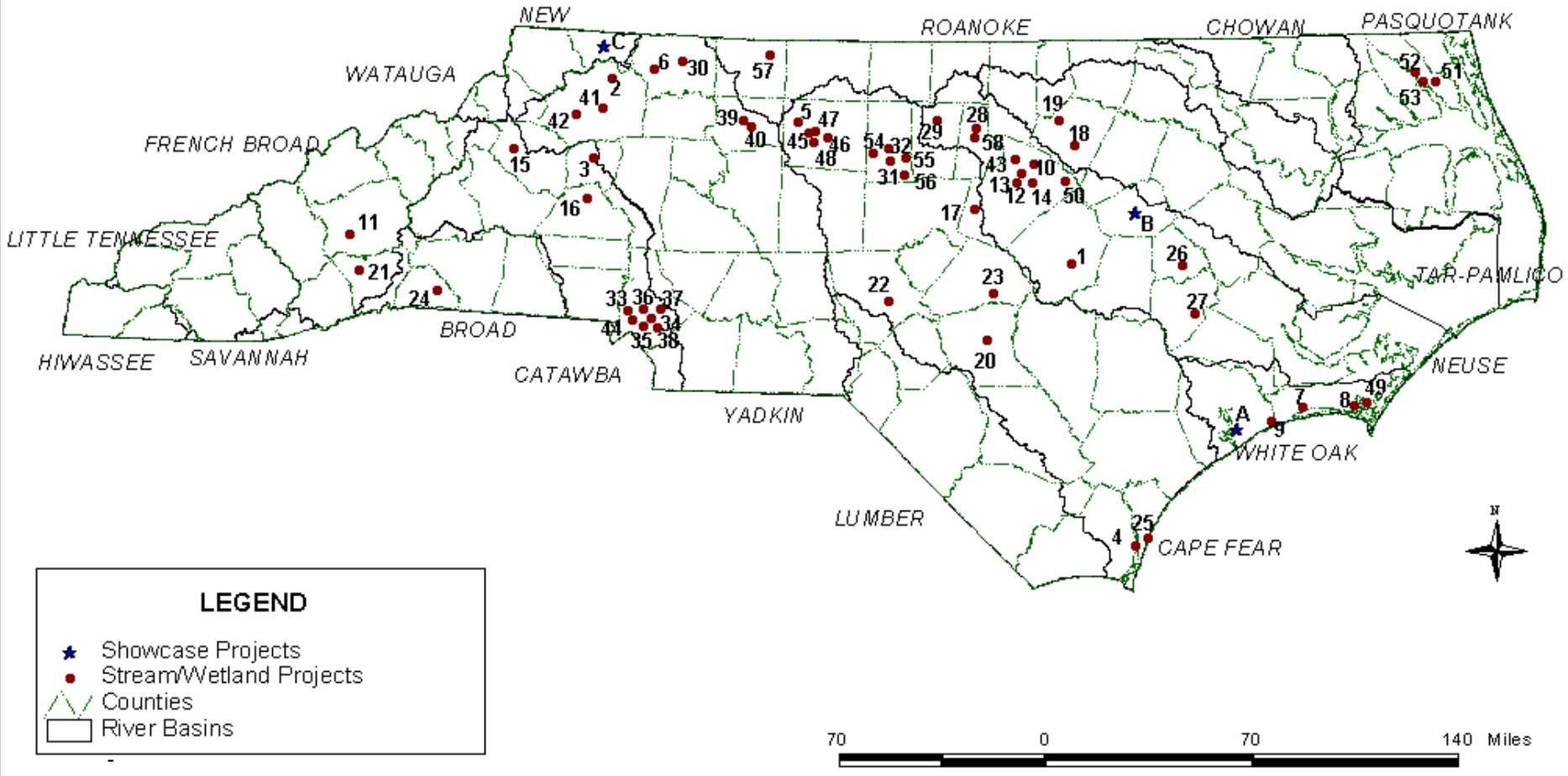


Figure 2-1. NCWRP Project Map

Project Map Index

1 North Pacolet River
2 Stone Mountain
3 Payne Dairy
4 Burnt Mill Creek
5 Price Park
6 Project on hold
7 Jumping Run Creek
8 Maritime Museum
9 Hammocks Beach
10 Smith/Austin Creek
11 High Vista
12 Kentwood Park
13 Chavis Park
14 Bertie Creek
15 Brown Branch
16 Wike Property
17 Little Beaver Creek
18 Louisburg
19 Bear Swamp Creek
20 Cross Creek
21 Clear Creek
22 Suck Creek
23 Jumping Run-Nursery
24 North Pacolet River
25 Pine Valley GC
26 Beamons Run
27 Whitelace Creek
28 Ellerbee Creek
29 Hillsborough
30 Beaver Creek
31 Hadley/Newlin Property
32 Sydnor Property
33 Freedom Park
34 Westfield
35 Myers Park HS
36 Roslyn
37 Whitehurst Rd.
38 McIntyre Creek
39 Brushy Fork Creek
40 Mills Creek
41 Bugaboo Creek
42 Warrior Creek
43 Cheviot Hills
44 Edgehill Park
45 Brown Bark
46 Hillsdale Park
47 Benbow Park
48 Gillespie GC
49 North River
50 Wendell
51 Spence Property
52 Charles Creek
53 Knobs Creek
54 Dixon Property
55 Pickett Property
56 McPherson Property
57 Snow Creek
58 Sandy Creek

Showcase Projects
A Sturgeon City
B Hominy Swamp
C Brush Creek

Featured Projects

Wilson Bay/Sturgeon City Wetland Restoration Project

The Sturgeon City marsh restoration project is located adjacent to Wilson Bay at the former site of the Jacksonville Wastewater Treatment facility. The restoration project addressed concerns of degraded water quality issues in Wilson Bay by providing wetland buffers to filter the runoff into the bay. Future plans for the facility include developing an environmental learning center.
In May 2000, the City of Jacksonville donated the land for the proposed restoration site through a permanent conservation easement to the state.

The goals of the project are:

- Increase the buffer width along Wilson Bay
- Reduce nutrient loading and pollutants from stormwater runoff
- Prevent shoreline erosion
- Increase wildlife habitat, and
- Provide educational and recreational opportunities to the area.

Design for the site occurred throughout the remainder of 2000 with grading and planting being completed in April 2001. During site preparation, 190,000 cubic feet of fill and debris were removed from the 2.6 acres of the marsh restoration site. Restored wetland types will include brackish marsh, estuarine shrub scrub, gum-cypress community and a bay forest. The restored wetlands will provide a buffer from runoff entering the bay and habitat for both aquatic and terrestrial life. The restored wetlands will filter 2.8 million cubic feet of stormwater runoff before entering Wilson Bay. The marsh will also provide filtration for up to 21.5 million cubic feet of river water daily. Hydrology, vegetation and stability of the site will be monitored for a minimum of five years to insure restoration success. The cost of the project was $230,000.

The restoration project on Wilson Bay serves as the cornerstone for the environmental learning center planned for the site. The design of the facility is integrated to maximize the use of restored wetlands for water quality, habitat and educational purposes. A second phase for restoration is currently in design with anticipated construction to begin in 2002. Phase II provides an additional 2.5 acres of wetlands to the site including the restoration of two tidal creeks. With the completion of Phase II, NCWRP will have restored 5.5 acres of wetlands at Sturgeon City.

Annually, NCWRP staff participate in the environmental field day held on site as part of the Student Leadership Institute started by the City of Jacksonville for 100 selected area students.

March 2001

Here students are taught the importance of wetlands, plant identification and restoration techniques. In addition, the Program's wetland restoration project supports and complements other funding for the improvement of the water quality of Wilson Bay from the 319 program and the Clean Water Management Trust Fund.

May 2001

Hominy Swamp Creek

Hominy Swamp Creek is a tributary of Contentnea Creek that runs through the middle of the City of Wilson. The project reach is located at City Park adjacent to downtown Wilson with a 5.4 square mile watershed. The project's schematic design is featured on the cover of this report. The purpose of the project is to improve water quality and habitat through reduced sediment loss and nutrient loads to the stream ecosystem. This will be accomplished through the establishment of a naturally stable, vegetated stream system on 2,200 linear feet of channel.

The NCWRP conducted a complete watershed assessment to analyze the problems within the contributing watershed, to identify problems and to offer recommendations for water quality improvement and verification of restoration potential. The assessment revealed that the historically agricultural watershed was changing into an area more dominated by residential land use. The increased impervious surface throughout the 5.4 square mile watershed coupled with the lack of woody vegetation on the banks has caused the stream to become unstable with eroding banks. The watershed assessment was provided to the City of Wilson for further use in making future improvements within the watershed. The City of Wilson donated a conservation easement on 4 acres for the stream restoration project.

A final design was completed and permitted in May 2001. Construction activities began in August 2001 and were completed in September 2001. The stream's dimension, pattern and profile were modified to provide a naturally stable channel. A mixture of native trees, shrubs and grass will be planted to provide a natural riparian buffer to and to stabilize the streambanks and filter stormwater runoff. The buffers will be planted in December 2001.

October 2000

September 2001

Brush Creek Stream Restoration Project

Brush Creek is a tributary to the New River in Alleghany County. The project is located at the confluence of Brush Creek and Little Pine Creek approximately five miles east of Sparta. The drainage area for Brush Creek at the project site is 26 square miles while the drainage area for Little Pine Creek is 4 square miles. Brush Creek is designated as trout waters and is home to several other rare fish species, including the Kanawha darter and Kanawha minnow. Little Pine Creek flows into Brush Creek onto its alluvial floodplain and historically was flooded when Brush Creek flooded.

Project goals include the reduction of fecal coliform levels in the stream, buffering of the system from an upstream Christmas tree farm, and the removal of an estimated 220,000 pounds of sediment per year from the stream. In time, as vegetation grows, shading will result in lower stream temperatures making the stream more suitable for trout habitat.

This site has been in agriculture for more than 100 years, including production of Christmas trees, crops and cattle. Due to conversion to agriculture use, the woody vegetation of the riparian buffer was removed. The loss of the deep-rooted vegetation has contributed to channel instability. Thirty years ago, Little Pine Creek was straightened to open up more land for crops. Over the last thirty years, Little Pine Creek has become incised due to the greater slope and also started to widen, causing bank erosion. The straightening also had a dramatic effect on bank erosion in Brush Creek in part due to the new angle at which Little Pine Creek entered the larger stream. Fences were lost because of the bank erosion and cows were allowed access to the stream.

The first part of the project restored the natural pattern, dimension and profile of Little Pine Creek. In addition, a riparian buffer was established on Little Pine Creek. This new channel will be toe-supported by bioengineering techniques, and will be stabilized by new bank vegetation. Another objective was to restore the historic confluence of this creek with Brush Creek. This was accomplished by bringing in the new channel at a more “natural” angle and reforming and stabilizing the massive erosion feature on the opposite bank of Brush Creek. The second phase of this project involved the restoration of channel profile and pattern to Brush Creek in addition to stabilization of its banks; establishment of a forested buffer and fencing out cattle. Channel profile and pattern were restored to Brush Creek with the addition of rock vanes, cross vanes, and j-hook weirs. Trout habitat was enhanced with crib walls and boulder placements, and restoring the pool-riffle sequence of the stream will assure better spawning and feeding areas for trout.

Construction began in late April 2001 and was completed in mid-June 2001.

June 2001

August 2001

Compensatory Mitigation Requirements Accepted by NCWRP

Wetland and Stream Mitigation Accepted

During FY 2000-2001, the compensatory mitigation requirements of 72 Section 404 permits and 401 Water Quality Certifications were accepted by the NCWRP. The mitigation requirements of these permits total 79,503 linear feet of stream channel and 72.60 acres of wetlands in nine river basins. Since 1997, the compensatory mitigation requirements of 208 Section 404 permits and 401 Water Quality Certifications have been accepted by the NCWRP (Table 2-3). The mitigation requirements of these permits total 177,377 linear feet of stream channel and 205.35 acres of wetlands in 17 river basins. Over 85 percent of the stream mitigation requirements and 71 percent of wetland mitigation requirements are in the Cape Fear, Catawba, Yadkin and Neuse River basins.

Table 2-3. Compensatory Mitigation Requirements Accepted by NCWRP by River Basin.

	Mitigation requirements accepted FY 2000-2001		Cumulative mitigation requirements accepted since NCWRP inception	
River Basin	**Stream Mitigation (feet)**	**Wetlands Mitigation (acres)**	**Stream Mitigation (feet)**	**Wetlands Mitigation (acres)**
Broad	0	0	800	0.0
Cape Fear	17,771	36.18	54,634	93.18
Catawba	20,516	8.91	47,200	19.91
Chowan	0	0	0	0
French Broad	0	0	5,938	0.25
Hiwassee	0	0	0	2.75
Little Tennessee	0	0	0	0
Lumber	0	1.60	0	4.40
Neuse	9,073	3.26	24,596	24.26
New	410	1.20	1,460	1.20
Pasquotank	1,047	5.26	1,047	6.46
Roanoke	3,676	5.43	3,676	8.43
Savannah	0	0	0	0
Tar-Pamlico	1,198	7.04	1,596	34.04
Watauga	0	0	0	0
White Oak	0	0	0	2.25
Yadkin	25,812	3.72	36,430	8.22
TOTAL	**79,503**	**72.60**	**177,377**	**205.35**

Riparian Buffer Mitigation Accepted

During FY 2000-2001, the NCWRP accepted a total of 36.6 acres of riparian buffer mitigation requirements in the Neuse and Tar-Pamlico river basins (Table 2-4). Cumulatively, the NCWRP has accepted 41.4 acres of riparian buffer mitigation in the Neuse and 0.08 acres of riparian buffer mitigation in the Tar-Pamlico River Basin. No buffer mitigation requirements have been accepted in the Catawba River basin. The discrepancy in the amount of buffer mitigation requirements accepted results from the effective date of rules requiring buffer mitigation (Neuse, 7/22/97; Tar-Pamlico, 1/1/2000; and temporary Catawba, 2/8/01) and the rate of urban growth within the river basin.

Table 2-4. Riparian Buffer Mitigation Requirements Accepted by NCWRP by River Basin

	Mitigation requirements accepted FY 2000-2001	Total mitigation requirements accepted since Riparian Buffer Rules became effective
River Basin	Riparian Buffer Mitigation (acres)	Riparian Buffer Mitigation (acres)
Neuse	36.6	41.4
Tar-Pamlico	0.08	0.08
Catawba	0.00	0.00
Total	36.68	41.48

Nitrogen Offset Payments in the Neuse River Basin

In March 2001, the Neuse Stormwater Rule (15A NCAC 02B.0235) became effective. This rule requires that certain local governments, based on their potential to contribute significant nitrogen loads to the Neuse River, implement nitrogen reduction programs that include the review and approval of stormwater management plans for new development. The local governments affected by this rule include: Cary, Durham, Garner, Goldsboro, Havelock, Kinston, New Bern, Raleigh, Smithfield, Wilson; and Durham, Johnston, Orange, Wake, and Wayne counties.

The intent of this rule is to reduce nitrogen runoff from urban areas. The rule imposes a 3.6 pounds per acre per year (lb/ac/yr) nitrogen loading limit on new development. Nitrogen loads from new developments that exceed this performance standard may be offset by payment of a fee to the NCWRP. This offset payment is allowable provided that no new residential development exceeds 6 lb/ac/yr and no new commercial development exceeds 10 lb/ac/yr.

The Neuse Stormwater Rule also requires that all affected local governments establish a program to identify places within existing developed areas that are suitable for stormwater retrofits. A list of retrofit opportunities must be submitted on an annual basis by each municipality to the Division of Water Quality. The NCWRP is interested in working with these municipalities to use the nitrogen offset payments to fund projects appropriate for nitrogen reduction in urban areas. Currently, the Neuse Stormwater Rule directs this money to the Wetland Restoration Fund whereby the funds can only be used to restore, create, enhance, and preserve wetlands and riparian areas. The Division is considering a change the Neuse Stormwater Rule to permit payment of offset money to the Riparian Buffer Restoration Fund. This change will allow the NCWRP much great flexibility in how this money can be spent so that constructed wetlands and other stormwater best management practices that are important for nitrogen reduction can be funded.

Status of Progress in Meeting Compensatory Mitigation Requirements

Wetland Mitigation Requirements

The NCWRP has identified 14 restoration projects that will restore approximately 342 acres of wetlands. These projects will be used to meet the compensatory mitigation requirements of 27 Section 404 permits/401 Water Quality Certifications. The wetland restoration resulting from these projects will exceed the required mitigation in within the White Oak, Neuse and Pasquotank River basins. Mitigation needs exceed currently identified projects in the Cape Fear, Catawba, Roanoke, Tar-Pamlico and Yadkin River basins (Figure 2-2). The NCWRP strategies to address these needs is outlined in Appendix A..

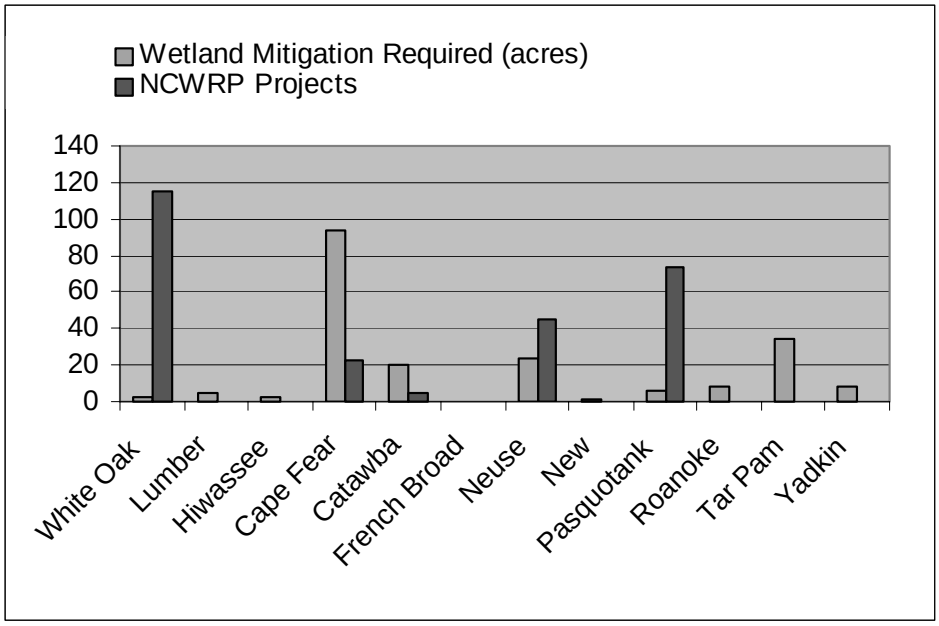


Figure 2-2. Cumulative Wetland Mitigation accepted compared to NCWRP Projects (acres)

Stream Mitigation Requirements

The NCWRP has identified 49 restoration projects that will restore approximately 164,162 linear feet of stream channel. These projects will be used to meet the compensatory mitigation requirements of 92 percent of the accepted Section 404 permits/401 Water Quality Certifications. The stream restoration resulting from these projects will exceed the required mitigation within the Broad, Neuse, New and Tar-Pamlico River basins (Figure 2-3). The Cape Fear River basin is the only basin in which there is a need for a significant number of projects to meet the assumed mitigation requirements. The strategies that have been initiated to meet these needs, including the development of three Local Watershed Plans, are described in Appendix A.

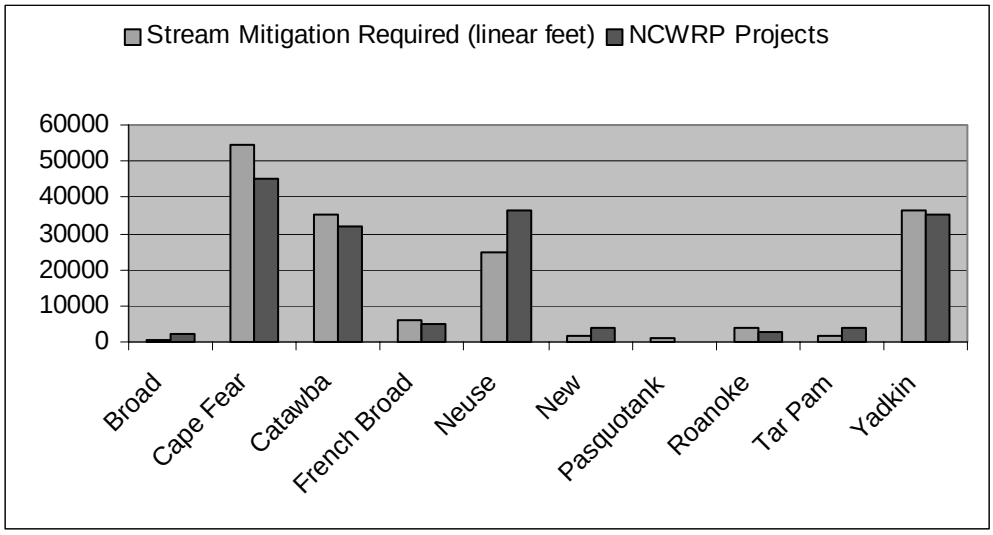


Figure 2-3. Cumulative Stream Mitigation accepted compared to NCWRP Projects (linear feet)

Summary of Progress in Meeting Compensatory Mitigation Requirements

As outlined in the preceding sections, the NCWRP has made significant progress in meeting the assumed compensatory mitigation requirements of Section 404 permits and 401 Water Quality Certifications. The majority of the mitigation requirements assumed by NCWRP are due during 2002. With currently identified projects, 81 percent of these requirements will be met. Strategies are in place that will result in the identification and implementation of projects to meet all of these requirements by December 2002. These strategies include the development of Local Watershed Plans in 10 watersheds with high needs. Additional actions include cooperative agreements with state and federal agencies (e.g. Natural Resources Conservation Service) that are providing assistance in the identification of suitable sites and landowner contact. Another important component of the NCWRP strategy is partnerships with local governments and state and federal agencies to implement restoration projects on degraded properties owned and/or managed by these agencies.

The program is implementing two riparian buffer restoration projects to meet compensatory mitigation in the Neuse River Basin. These two projects will provide 43.3 acres of riparian buffer restoration to compensate for the cumulative mitigation requirements in this basin of 41.4 acres. The NCWRP began receiving payments for riparian buffer mitigation requirements in the Tar-Pamlico River Basin in November 2000. Two projects are under way involving riparian buffer restoration in this river basin.

Section 3. Trust Funds

Wetlands Trust Fund

Introduction

The Wetlands Trust Fund was established by the General Assembly as a repository for funds to restore, create, enhance, and preserve wetlands and riparian areas throughout North Carolina. Three accounts have been established within the Wetlands Trust Fund, Account 2980 - Wetland Restoration, Account 2981 - Compensatory Mitigation, and Account 2982 - Riparian Buffer Restoration. Account 2980 is the repository for appropriations received from the General Assembly. This account is used to implement restoration projects to compensate for cumulative losses of wetlands and riparian areas associated with impacts that are below the threshold that triggers the compensatory mitigation requirement and to address the historical loss of wetland and riparian area functions. Account 2981 is the repository for payments made to the Wetlands Restoration Program to satisfy the compensatory mitigation requirements of Section 404 permits and 401 Water Quality Certifications. Account 2982 is the repository for payments to the program for mitigation of riparian buffer impacts in the Neuse, Tar-Pamlico, and Catawba River basins. Funds deposited in accounts 2981 and 2982 are only used to implement projects designed to meet the compensatory mitigation requirements associated with impacts accepted by the Wetlands Restoration Program.

The NCWRP is committed to the implementation of restoration projects in advance of permitted impacts. When the program was first established, sufficient payments to Account 2981 from permitted impacts were not received by the time a high quality project was identified within a specific watershed. In these cases, Account 2980 was used to implement projects. Upon acceptance of the project as compensatory mitigation by the regulatory agencies, Account 2980 is reimbursed from Account 2981 for the entire amount of funds used to implement the project. This procedure enables the NCWRP to reduce the time between the loss of wetland and riparian area function and the replacement of these functions by implementing projects in advance of the permitted impact. Due to the types of projects implemented by the program, the probability of the projects not being accepted by the regulatory agencies is low. In those instances where a project may not be accepted it will still provide water quality, habitat, and other benefits and can be used to compensate for the cumulative losses associated with small projects. Regardless of the value of a project in terms of fulfilling compensatory mitigation requirements, all projects implemented will result in high quality restoration that is specifically designed and implemented to address locally identified watershed problems.

Income/Receipts

Account 2980 – Wetlands Restoration

One $20000 payment was received by NCWRP for long-term management of a restoration site in the Charlotte area that was donated as a component of a compensatory mitigation requirement. The only other revenue deposited to this account during FY00-01 was interest income for the fiscal year. Interest from all three accounts within the Wetland Trust Fund totaled $2,270,622. Interest income earned on account 2980 was $675,176.40. The portions of interest generated by accounts 2981 and 2982 during FY00-01, which had been deposited to account 2980, were refunded to the respective accounts. Interest generated during previous fiscal years will be refunded to 2981 and 2982 during FY01-02.

Funds in account 2980 will be used for design and construction of current projects, as matching funds for federal grants, and for projects to mitigate for unregulated impacts. During the budget crisis, the General Assembly reverted $3.4 million from account 2980 to the General Fund to help balance the state budget (Senate Bill 1005, Section 2.2(d)). These funds were earmarked by the

program for long-term maintenance and monitoring of current projects, and for future projects to mitigate for unregulated impacts. The reversion will leave only $102,635 of the $3,502,635 needed for this budget line item.

Account 2981 – Compensatory Mitigation

Deposits to account 2981 during FY00-01 totaled $15,587,106. Of this total, $11,513, 374 represented payments to the NCWRP for mitigation of permitted impacts. The remaining deposits represent interest earned ($1,565,422) and the annual payment ($2,500,000) from the Department of Transportation for the development of Local Watershed Plans (Table 3-1).

Table 3-1. N.C. Department of Environment and Natural Resources (DENR) Wetlands Trust Fund

DENR WETLANDS TRUST FUND WETLANDS RESTORATION Account 2980		
Balance on 07/01/00	*$11,467,792*	
Revenue (FY00-01)		
Interest earned		
2980		$675,176
2981		$1,565,422
2982		$30,024
Interest total		$2,270,622
Other payments		$20,000
Expenditures (FY00-01)		$1,586,213
Interest transfers		
2981		$1,565,422
2982		$30,024
Balance as of 6/30/01	*$10,576,755*	
Encumbrances/Obligations		
Current contractual encumbrances (FY00-01)		$4,593,688
Interest refunds due to 2981		$715,290
Interest refunds due to 2982		$3,995
Federal matching funds		$1,761,147
Long-term maintenance and management**		$3,502,635
Reversion of funds during the FY00-01 budget emergency		$-3,400,000
**Actual funds available for maintenance and future projects		$102,635
Balance of unallocated funds	*$0*	

Table 3-1. N.C. Department of Environment and Natural Resources (DENR) Wetlands Trust Fund

DENR WETLANDS TRUST FUND		
COMPENSATORY MITIGATION Account 2981		
Balance on 07/01/00	*$17,955,266*	
Receipts (FY00-01)		
Compensatory mitigation payments		$11,513,374
Nitrogen Offset Payments		$8,310
DOT/MOU		$2,500,000
Interest		$1,565,422
Expenditures (FY00-01)		$1,032,616
Balance as of 6/30/01	*$32,509,756*	
Expenses		
Current contractual encumbrances (FY00-01)		$1,486,926
Funds reserved for:		
Administration		$310,000
Design and construction of current projects		$14,036,982
Monitoring of projects		$450,000
Local Watershed Restoration Plans		$4,704,164
Projects to compensate for impacts in FY00-01		$11,513,374
Nitrogen offset projects		$8,310
Balance of unallocated funds	*$0*	
RIPARIAN BUFFER RESTORATION Account 2982		
Beginning Balance as of 07/01/00	*$121,004*	
Receipts (FY00-01)		$1,671,665
Compensatory Mitigation Payments		$1,641,641
Interest		$30,024
Balance as of 6/30/01		$1,792,669
Reserved for projects to meet riparian buffer mitigation requirements		$1,792,669
Balance of unallocated funds	*$0*	

Forty-eight percent of the permits accepted by the NCWRP were from the private sector. The payments for these permits totaled $1,698,895. Fifty-two percent of permits accepted by NCWRP were from state, local and federal government agencies, of which 87 percent were for DOT transportation improvement projects. Payments from government agencies totaled $9,814,479. Nitrogen offset payments in the amount of $8,310 were received for projects within the Neuse River Basin. An itemized listing of payments to the fund is shown in Appendix F, Table F-1. Stream impacts accounted for 86.1 percent of payments to the Compensatory Mitigation Fund, while 12.1 percent came from riparian wetland impacts, and 1.8 percent came from non-riparian impacts (Fig. 3-1).

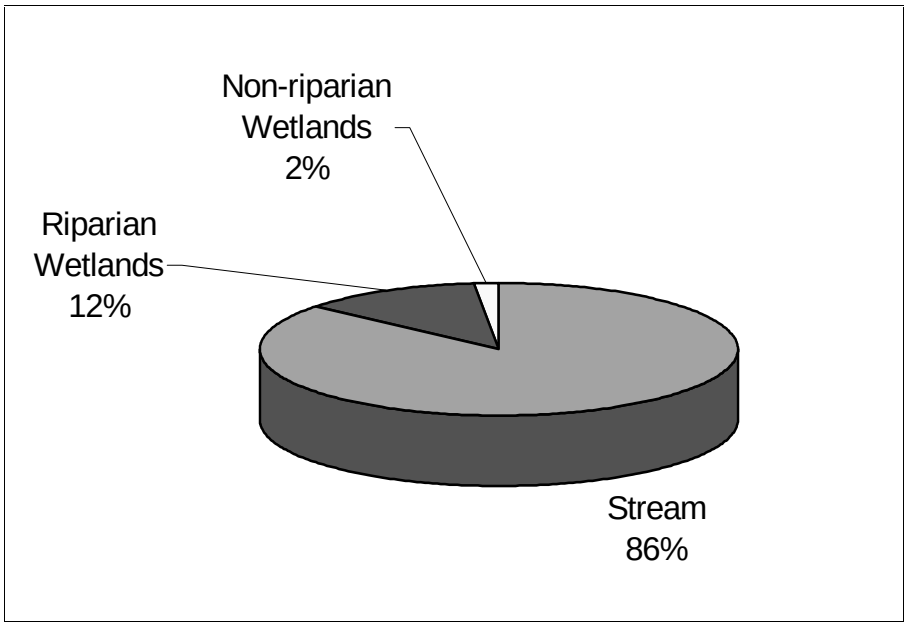


Figure 3-1. Percentage of payments from each impact category.

The North Carolina Department of Transportation (DOT) paid $8,626,500 into the compensatory mitigation fund for permitted impacts associated with transportation improvement projects (TIP). These payments made up 75 percent of the total receipts. Over 86 percent of stream impacts were associated with TIP. A single payment of $670,000 made up nearly half of the riparian wetland mitigation requirements accepted by NCWRP this year. The payment satisfies compensatory mitigation requirements for the impact of development of the Red Ramp project at Pope Air Force Base.

In addition to compensatory mitigation payments for impacts, the DOT provided $2.5 million to the NCWRP for development of local watershed plans as part of a memorandum of agreement. The funds were deposited in the Compensatory Mitigation Fund, and provide for assessments of water quality and habitat improvement needs in targeted local watersheds. Funds provided through the MOA are considered advances on compensatory mitigation for transportation improvement projects in the targeted areas. These plans will increase the ecological effectiveness of restoration and water quality improvement measures by focusing on specific water quality problems in the local areas. Section 1 of the NCWRP 2000 Annual Report describes the details of the memorandum of agreement between the program and the DOT. The text of the MOA is included in the Wetlands Restoration Program 2000 Annual Report in Appendix A, Table A5. The document is available online at the NCWRP website:

http://h2o.enr.state.nc.us/wrp/publications/pubs.htm.

Expenditures

During FY00-01, the NCWRP spent $1,586,213 and $1,032,616 from the Wetlands Restoration Fund Accounts 2980 and 2981, respectively. Fourteen environmental engineering and consulting firms received 86 percent of these funds to conduct feasibility studies, design and construct restoration projects throughout the state. Approximately 13 percent of the expenditures went to N.C. State University's Stream Restoration Institute for project design and construction management services of the Stone Mountain State Park stream restoration demonstration project. The remaining 1 percent was used for legal and survey fees related to property acquisition and for two contracts related to watershed restoration planning. One contract supported a Division of Coastal Management intern studying potential improvements in coastal

mitigation policy. The second contract provided funds for a Division of Coastal Management wetlands and restoration mapping project. A listing of all expenditures from the Wetlands Restoration Fund is shown in Appendix F (Tables F-3).

Eighty-four percent of the expenditures from the Wetlands Restoration fund were used for engineering, design and construction of 25 restoration projects that are under way across the state (Fig. 3-2). Site acquisition costs, which include a position at the State Property Office, comprised 4 percent of total expenditures. Six percent of expenditures were related to planning and six percent to administration. Planning and administration include salaries, office support and travel to public meetings and to potential restoration sites. The program seeks public involvement at the local level to identify problems affecting water quality and wetland, stream and streamside habitats within the watersheds that could be improved through restoration projects and other activities by sponsoring workshops and public meetings to educate the public about restoration activities. Contacts made at these meetings help to identify landowners with an interest in restoring degraded wetland and riparian areas on their properties.

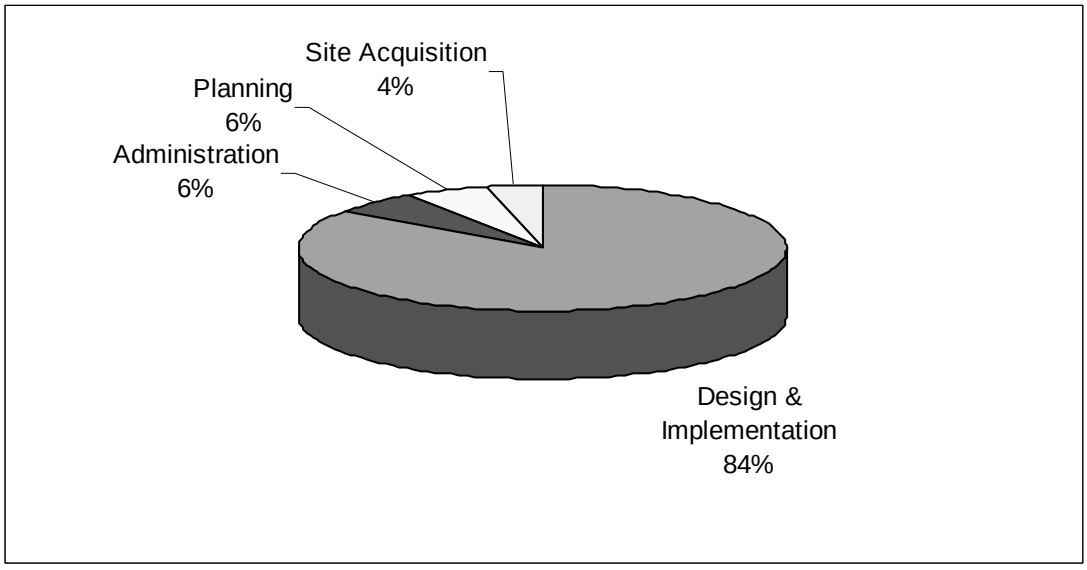


Figure 3-2. Percentage of expenditures from the Wetland Trust Fund during FY00-01, by activity, based on total expenditures of $2,618,829

During the first three years of the Wetlands Restoration Program, no funds from the compensatory mitigation fund were allocated for administration. Administrative cost during FY00-01 reflects the addition of four positions to the program. The positions are involved in planning activities and in administrative requirements associated with the MOA with the Corps of Engineers and the DOT. The percentage of compensatory mitigation payments accepted that were spent for administration during the program's history is shown in Fig. 3-3. Administration cost accounts for less than 1.8 percent of payments, and is not expected to exceed 2 percent during the coming fiscal year. Projected payments during FY01-02 equal actual payments received during FY00-01.

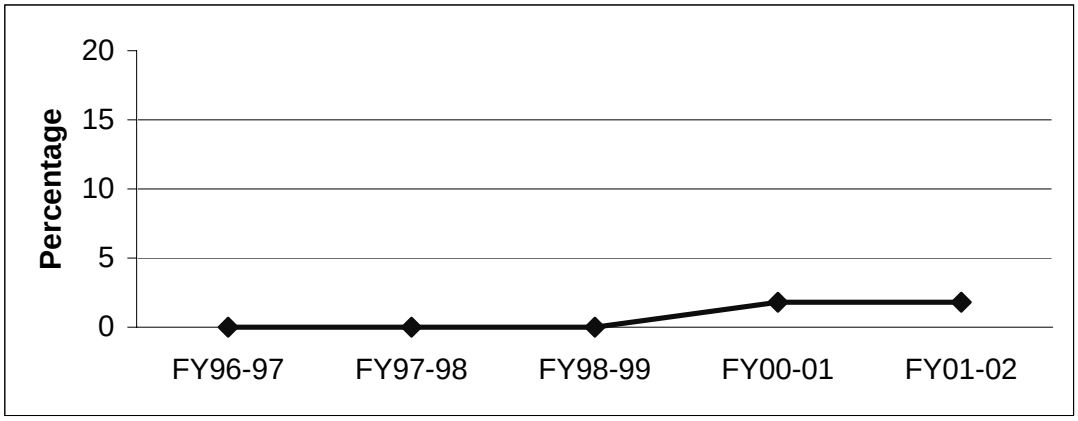


Figure 3-3. Percentage of compensatory mitigation payments allocated for administration*

*FY01-02 percentage is a projection based on the assumption that payments during FY01-02 will approximately equal payments received in FY00-01.

Encumbrances

Encumbered funds through contractual agreements totaled $6,080,614.50 at the end of FY00-01. Accounts 2980 and 2981 have $4,593,688 and $1,486,926 remaining in encumbered contracts, respectively. Ten of the contracts provide watershed assessments, hydrologic modeling, engineering, pre-monitoring of groundwater levels and other specialized services that are critical for restoration of functional wetland and stream habitat. The remaining contractors provide watershed restoration planning, construction, or construction management. Expenditures from these contracts are categorized as design, construction, and construction management, and are itemized in Appendix F, Table F-3.

Riparian Buffer Trust Fund

Account 2982 – Riparian Buffer Restoration

During FY00-01, $1,671,665 was deposited to the riparian buffer fund (Table 3-1). The ending balance in the fund was $1,792,669. Itemized payments are shown in Appendix F, Table F-2. More than 92 percent of payments to the fund were received during the last quarter of FY00-01. No funds have been encumbered or spent from the Riparian Buffer Restoration Fund to date. Two riparian buffer restoration projects were begun before the Riparian Buffer Restoration Fund had accumulated sufficient money from permits to allow the encumbrance of large contracts. The appropriate account, 2980 or 2981, will be reimbursed for expenditures for riparian buffer restoration projects from fund 2982 during the coming fiscal year.

Section 4. Statewide Wetland and Stream Losses and Gains

Introduction

The Department of Environment and Natural Resources is one of the agencies responsible for protecting and restoring the functions and values of wetlands and streams across the state. The N.C. Wildlife Resources Commission, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Association, local governments, and countless non-profit organizations are all working to maintain and add to North Carolina's remaining inventory of wetlands and streams. Despite the efforts of these groups, there is still an annual net loss of streams in North Carolina, and a net loss of wetlands in some river basins.

The Division of Water Quality and Division of Land Resources within the Department of Environment and Natural Resources regulate construction activities near streams and wetlands. The intent of these regulatory programs is to minimize the impact of construction projects to these resources and to ensure that unavoidable impacts are addressed through mitigation projects. DENR also funds restoration projects through the North Carolina Wetland Restoration Program, 319 Program, Clean Water Management Trust Fund, and Division of Water Resources Grant Program that can help to offset stream and wetland impacts.

This section presents a summary of information gathered by the NCWRP concerning statewide wetland and stream losses and gains that occurred in the state during FY 2000-2001. This information represents the activities of not only the Division of Water Quality, but also other agencies and programs working to protect and restore wetlands and streams across the state. Wetland, stream and buffer losses and gains are tracked through the Wetlands/401Unit of the Division of Water Quality, and are presented under the heading Regulatory Losses and Gains. Information about other programs is presented under the heading Non-Regulatory Gains.

Regulatory Losses and Gains

The information presented in this section is based on the 401 Water Quality Certification database maintained by the Wetlands/401 Unit of the Division of Water Quality. This database tracks wetland and stream losses that are authorized through the issuance of a 401 Water Quality Certification. The issuance of a 401 Water Quality Certification by the Division of Water Quality is required before the Corps of Engineers can issue a Section 404 Permit authorizing the fill or alteration of wetlands and/or streams. Although in the majority of cases the impacts authorized by the 401 Water Quality Certification are consistent with the impacts authorized by the Section 404 Permit, it should be noted that the amount of impact authorized by the Section 404 Permit may be less than that authorized by the 401 Water Quality Certification and, in some cases, a Section 404 Permit may never be issued. In addition, the authorized impacts may not occur during this fiscal year and in some cases may never occur. The Division of Water Quality is increasing its efforts to monitor and track the impacts that actually occur during each fiscal year. Questions about information presented in this report regarding regulatory wetlands losses and gains should be directed to Mr. John Dorney with the Division of Water Quality's Wetlands/401 Unit at (919) 733-9646.

In addition to the wetland and stream impacts that are tracked in the database, an unknown amount of permanent wetland and stream losses occurs and can be attributed to two causes. First, projects that affect less than one-third of an acre of wetlands or less than 150 linear feet of stream are not required to receive written confirmation from the Division of Water Quality and, therefore, might not be reported. Second, at this time, the magnitude of unauthorized impacts to wetlands and streams is still being assessed. The Division of Water Quality is working to resolve this issue.

Permitted Wetlands Impacts

During FY 2000-2001, the Division of Water Quality issued Water Quality Certifications authorizing 223.893 acres of wetland impact. Table 4-1 summarizes the permitted wetland impacts that occurred throughout the state by river basin. The majority of these impacts occur in river basins that flow through the coastal plain.

Table 4-1. Permitted Wetland Losses and Required Mitigation, 401 Water Quality Certifications, FY 2000-2001.

	Impacts <1 acre	Impacts > 1 acre	Total Impacts (acre)	Required Mitigation (acre)*	Gains or Losses(-) (acre)
Broad	0.09	0.00	0.09	0.00	-0.09
Cape Fear	11.26	35.95	47.21	67.35	(+) 20.14
Catawba	4.64	1.483	6.123	4.27	-1.85
Chowan	1.74	0.00	1.74	0.00	-1.74
French Broad	0.80	0.00	0.80	0.00	-0.80
Hiwassee	0.00	0.00	0.00	0.00	0.00
Little Tennessee	0.00	0.00	0.00	0.00	0.00
Lumber	4.33	1.70	6.03	0.00	-6.03
Neuse	16.23	23.99	40.22	20.57	-19.65
New	0.60	0.00	0.60	0.00	-0.60
Pasquotank	6.98	88.95	95.93	185.16	(+) 89.23
Roanoke	0.12	2.86	2.98	5.72	(+) 2.74
Savannah	0.00	0.00	0.00	0.00	0.00
Tar-Pamlico	4.98	4.90	9.88	9.80	-0.08
Watauga	0.14	0.00	0.14	0.00	-0.14
White Oak	2.52	0.00	2.52	0.00	-2.52
Yadkin	4.58	5.05	9.63	9.84	(+) 0.21
TOTALS	**59.01**	**164.883**	**223.893**	**302.71**	**(+) 78.82**

* These data are for permanent wetland loss and do not include impacts from Nationwide Permit 12 and 33 and Regional General Permit 030, since these impacts are temporary or are impacts to water (e.g., drainage).

Permitted Stream Impacts

During the FY 2000-2001, Water Quality Certifications were issued authorizing 159,717 linear feet of permanent stream impact. These impacts are summarized by river basin in Table 4-2. The majority of these impacts occur in the piedmont and mountain regions of the state and in urban areas.

Table 4-2. Permitted Stream Losses* and Required Mitigation, 401 Water Quality Certifications, FY 2000-2001.

River Basin	Stream Impacts (linear feet)	Mitigation (feet)	Gains or Change in Linear Feet
Broad	2,578	1,600	-978
Cape Fear	28,084	12,619	-15,465
Catawba	48,225	6,405	-41,820
Chowan	113	0	-113
French Broad	4,063	0	-4,063
Hiwassee	4,036	0	-4,036
Little Tennessee	2,663	0	-2,663
Lumber	423	0	-423
Neuse	29,508	5,342	-24,166
New	2,610	410	-2,200
Pasquotank	432	0	-432
Roanoke	1,364	0	-1,364
Savannah	119	0	-119
Tar-Pamlico	10,818	5,398	-5,420
Watauga	2,880	0	-2,880
White Oak	160	0	-160
Yadkin	21,641	9,001	-12,640
TOTAL	159,717	40,775	-118,942

* These data are for permanent stream loss and do not include impacts from Nationwide Permit 12 and 33 and Regional General Permit 030 since these impacts are temporary or impacts to water (e.g., drainage).

Permitted Riparian Buffer Impacts in the Neuse and Tar-Pamlico River Basins

The Riparian Buffer Rules are currently in effect for both the Neuse and Tar-Pamlico river basins. These rules apply to 50-foot wide riparian buffers directly adjacent to surface waters including intermittent and perennial streams, lakes, ponds, and estuaries. Activities within riparian buffers are categorized as exempt, allowable, allowable with mitigation, or prohibited. The Wetlands/401 Unit of the Division of Water Quality regulates activities in riparian buffers and maintains the database of riparian buffer losses that are permitted through the issuance of an Authorization Certificate.

During FY00-01, 32.48 acres of buffer impact in the Neuse River Basin and 3.32 acres in the Tar Pamlico River Basin were authorized. There were no authorized riparian buffer impacts in the

Catawba River Basin during the FY 2000-2001. The temporary rules for the Catawba River Basin did not go into effect until February 8, 2001.

Compensatory Mitigation

The purpose of compensatory mitigation is to replace wetland and stream functions that are lost through permitted impacts to stream and wetlands. Ninety-five of the 401 Water Quality Certifications issued during FY00-01 required wetland or stream mitigation. Of those, 44 percent were satisfied through payment to the NCWRP. Compensatory mitigation requirements for 3 percent were satisfied through payment to private mitigation banks. The required compensatory mitigation was conducted on site by the applicant for the remaining 53 percent of the certifications.

Wetlands

During FY 2000-2001, a total of 302.71 acres of wetland restoration and creation was required as compensatory mitigation through the issuance of 401 Water Quality Certifications (Table 4-1). The statewide compensatory mitigation requirements for wetlands exceeded the authorized impacts by 78.82 acres. Twenty-six percent (59.01acres) of this total amount of wetland impact is attributed to projects that impact less than one acre of wetland and, therefore, those impacts do not require compensatory mitigation as a condition of the 401 Water Quality Certification.

Streams

The compensatory mitigation requirements of the 401 Water Quality Certifications issued during FY 2000-2001 totaled 159,717 linear feet of stream (Table 4-2). The authorized stream impacts exceeded the compensatory mitigation requirements for stream restoration in every river basin. The authorized impacts statewide exceed the compensatory mitigation requirements by 118,942 feet. This substantial difference between permitted stream impacts and compensatory mitigation requirements is attributable to two factors. First, stream impacts must exceed the minimum threshold of 150 linear feet before compensatory mitigation is required. Second, mitigation is only required for impacts to perennial streams. No mitigation was required for the loss of intermittent streams.

Non-Regulatory Gains

In addition to restoration projects associated with compensatory mitigation requirements, there are numerous state, federal and local government agencies as well as non-profit organizations that are involved in restoration activities. In order to determine the magnitude of these efforts and to provide a mechanism to share information on restoration efforts, the NCWRP conducted a survey to collect information concerning the amount of wetlands and streams that have been restored, created, enhanced, and preserved during the FY 2000-2001 (Appendix D, Table D1). Based on the results of this survey, 24 acres of wetland restoration/creation and 3,750 linear feet of stream restoration were completed during the FY 2000-2001. A listing of these projects as well as the organizations that received the survey is shown in (Appendix D, Table D2). The full text of the survey is presented at the end of Appendix D.

The NCWRP is committed to tracking stream and wetland restoration efforts that are conducted outside of regulatory requirements. The data for wetland and stream restoration presented in this section should be evaluated with the following caveats:

The distinction between restoration and enhancement is difficult to discern. Projects that are categorized by survey respondents as restoration projects may actually be enhancement projects.

The NCWRP makes every effort to notify appropriate organizations about the restoration project survey. It is likely, however, that some restoration projects completed during FY00-01 are not recorded in the NCWRP database. The NCWRP is continuing to improve methods of data collection to increase the accuracy of the information provided in this section.

Net Gains / Losses of Wetlands and Streams Including Regulatory and Non-Regulatory Gains in Wetlands and Streams

As depicted in Tables 4-3 and 4-4, when regulatory losses, compensatory mitigation requirements, and non-mitigation projects are combined, there is a net gain of 102.82 acres of wetlands and a net loss of 115,192 linear feet of streams for the state. There was a net loss of wetlands in some river basins. Additional wetland, riparian and buffer preservation efforts were reported (Appendix Table D-1). In the Catawba River Basin, 91.6 acres of wetland and 72,680 linear feet of streams were protected. Preservation reported in the Pasquotank and Yadkin River basins was 132.41 and 28.66 acres, respectively. In the Yadkin, 14,880 linear feet of stream was preserved. Riparian buffer preservation reported in the Catawba and Yadkin-Pee Dee River Basins was 1,232.25 and 447.34 acres, respectively.

Table 4-3. Net Gains/Losses of Acres of Wetlands by River Basin, FY 2000-2001.

River Basin	Regulatory gains or losses (acres)	Non-regulatory gains restoration/creation (acres)	Net gains/losses (acres)
Broad	-0.09	**2**	(+) 1.91
Cape Fear	(+) 20.14	**0**	(+) 20.14
Catawba	-1.85	**0**	-1.85
Chowan	-1.74	**1**	-0.74
French Broad	-0.80	**0**	-0.80
Hiwassee	0.00	**0**	0.00
Little Tennessee	0.00	**0**	0.00
Lumber	-6.03	**0**	-6.03
Neuse	-19.65	**1**	-18.65
New	-0.60	**0**	-0.60
Pasquotank	(+) 89.23	**0**	(+) 89.23
Roanoke	(+) 2.74	**0**	(+) 2.74
Savannah	0.00	**0**	0.00
Tar-Pamlico	-0.08	**0**	-0.08
Watauga	-0.14	**0**	-0.14
White Oak	-2.52	**0**	-2.52
Yadkin	(+) 0.21	**20**	(+) 19.79
TOTAL	(+) 80.30	24	(+) 102.82

Table 4-4. Net Gains/Losses of Linear Feet of Stream by River Basin, FY 2000-2001.

River Basin	Regulatory gains or losses (linear feet)	Non-regulatory gains restoration/creation (linear feet)	Net gains/losses (linear feet)
Broad	-978	0	-978
Cape Fear	-15,465	0	-15,465
Catawba	-41,820	0	-41,820
Chowan	-113	1,000	887
French Broad	-4,063	0	-4,063
Hiwassee	-4,036	0	-4,036
Little Tennessee	-2,663	2,600	-663
Lumber	-423	0	-423
Neuse	-24,166	0	-24,166
New	-2,200	0	-2,200
Pasquotank	-432	0	-432
Roanoke	-1,364	0	-1,364
Savannah	-119	0	-119
Tar-Pamlico	-5,420	0	-5,420
Watauga	-2,880	0	-2,880
White Oak	-160	0	-160
Yadkin	-12,640	150	-12,490
TOTAL	**-118,942**	**3,750**	**-115,192**

Compensating for Non-Mitigated Wetlands Losses and Gains

An important role of the NCWRP is to provide compensation for permitted impacts to wetlands and streams that fall below the regulatory threshold requiring compensatory mitigation by the 401 Water Quality Certification. As discussed previously, the Division of Water Quality does not require compensatory mitigation for impacts to wetlands that are less than one acre or for impacts to streams that are less than 150 feet. On an annual basis, the cumulative effects of these impacts result in a substantial loss of wetland and riparian resources. During FY 2000-2001, an estimated total of 59.01 acres of wetlands were lost due to permitted impacts less than one acre in size. These impacts are summarized by river basin in Table 4-1.

Through the Wetlands Trust Fund, the NCWRP has resources to fund projects that offset these wetland losses. The NCWRP uses appropriated funds, interest earned by the Wetlands Trust Fund and grant awards to work in areas where non-mitigated impacts are significant. The following list of projects provides just a few examples of how the NCWRP is using these resources to compensate for non-mitigated wetlands impacts.

- The NCWRP is working on a 1,000 to 1,200 linear foot restoration project on R.N. Harris school property in Durham. The project will provide water quality and habitat benefits, and science teachers at the school plan to use the site for educational enhancement activities.

- The NCWRP contributed funds to the Conservation Reserve Enhancement Program managed by the Division of Soil and Water to restore wetlands on farms in the Neuse, Tar-

Pamlico, Chowan, and upper Cape Fear river basins to offset wetland losses in these areas of the state.

- Through funding provided by the NCWRP, the Division of Coastal Management is producing up-to-date wetlands maps for 20 additional counties in the coastal plain. These maps will help to prevent wetland losses by providing regulatory agencies and local governments with more accurate information about the location of wetlands that should be protected.

- The NCWRP is developing a MOA with the Wildlife Resources Commission to facilitate a partnership for restoring coldwater mountain trout streams.

Section 5. Analysis of Restoration Costs

Cost Analysis of Restoration Projects

The NCWRP annually documents the costs of wetland and stream restoration and compares these costs to the Schedule of Fees found at 15A NCAC 2R .0402. The activities associated with restoration of wetlands and streams can be grouped into seven different categories. The NCWRP has developed a database to track the costs of each restoration project utilizing these categories. Each of these categories and the specific activities within each category is described below.

Site Identification: Activities include “on-the-ground” assessment of sites identified through the basin-wide and local watershed planning process. In addition, many potential sites are recommended to the NCWRP by state, federal and local government agencies, local land trusts, and private citizens. Individual site assessments by NCWRP personnel and/or consultants are essential to confirm the restoration potential of these sites prior to the further expenditure of funds.

Site Acquisition: All sites used for restoration projects are protected in perpetuity through fee simple purchase, or donation or purchase of a conservation easement. Protection of these sites is necessary to ensure that activities that may interfere with the goals of the project do not occur and to ensure that the wetland and riparian functions of the sites are protected. Whenever possible, arrangements are made for an appropriate third-party recipient to hold title to the property such as a local land trust or Soil and Water Conservation District. Since the sale or donation of real property interests is strictly voluntary, interested landowners must be identified for each NCWRP project. This step therefore involves extensive negotiations with landowners and outreach efforts to encourage participation.

Project Assessment/Design: The first step in the project design is the site assessment study to document the restoration potential of the site prior to any additional data collection. A feasibility study may be performed to document sufficient restoration potential. Through documentation of existing conditions, a baseline of important information is established which is later used to develop project design specifications and evaluate restoration success. By assessing the surrounding watershed, causes of water quality impairment are investigated and appropriate restoration project solutions are developed. This step also involves the identification of a reference site that can be used to estimate the functional success of the project. A conceptual restoration plan is developed during this step.

The design phase involves the production of the final technical products prepared from the conceptual plan. Project design includes creating the specifications and blueprints of the project that guide the construction of the restoration project. Important considerations made during this step include labor and material costs, limitations on construction including seasonal restrictions, plant materials required, and an estimate of the total cost of the restoration project.

Construction Management: The designer of the project will designate an individual to be on site to oversee the daily construction activities of the restoration project. This individual will be qualified and experienced in the construction activities associated with wetland, stream and riparian buffer restoration. This on-site project manager will coordinate construction activities including any minor modifications of design. In addition, this person will be the contact for the NCWRP’s project manager assigned to the project.

Site Restoration: The "on-the-ground" modifications to carry out the site design plans developed for the project are conducted during this phase. This phase generally requires the use of earth moving equipment for the purposes of grading, channel relocation, and installation of water

control structures. Other activities include the control of invasive plant species, planting of desired tree and shrub species, and the installation of monitoring gauges for the purpose of conducting post-construction monitoring.

Post-Monitoring: Data are collected and evaluated to determine if the project is meeting established success criteria. This process may involve hydrological, floral, and faunal comparisons of data collected at the restoration site and a reference site. Any temporary water control structures placed during site restoration will also be evaluated during post-monitoring to determine the appropriate specifications and placement of permanent structures. Remedial actions such as replanting vegetation are performed to ensure project success. The post-monitoring period generally lasts for five years.

Long-Term Maintenance and Management:: This phase includes annual site visits to ensure that no unauthorized activities have occurred on the restoration site. Site visits include inspections of water control structures, fences, and signs and performance of repairs as warranted. Remedial actions, such as fence repair and minor hydrological modifications may be required years after the project is completed to ensure the continued success of the project. In addition some restoration sites may require activities such as controlled burning.

Cost of Wetland Restoration Projects

The NCWRP has completed four wetland restoration projects. One project is a riparian wetland restoration project and three are brackish/salt marsh restoration projects. All of the projects are within the coastal plain physiographic region of the state. Project costs vary depending on the wetland type being restored (Table 5-1).

Table 5-1. Wetland Restoration Costs for NCWRP Projects

Project	Jumping Run Creek	Hammocks Beach	Sturgeon City	Maritime Museum
Site identification	$4,050	$2,250	$5,688	$0.00
Site acquisition	$0.00	$0.00	$0.00	$0.00
Project design	$16,125	$20,000	$61,000	$50,534
Construction management	$12,500	$12,500	$40,400	$5,000
Site restoration	$66,000	$27,500	$108,000	$110,570
Post monitoring*	$8,250	$5,230	$8,750	$600
Long-term management*	$3,450	$2,625	$11,375	$0.00
Size (acres)	4.4	0.5	3.06	0.55
Wetland type	Riparian (urban)	Coastal – salt marsh	Brackish marsh	Coastal – salt marsh
Total cost	$110,375	$70,105	$235,214	$166,704
Cost/acre	$25,085	$140,210	$76,867	$303,098
Project status	Monitoring	Monitoring	Monitoring	Monitoring

* Projected cost for monitoring (for 5 years) and long-term management

Riparian Wetland : The Jumping Run Creek project is located in Carteret County in an urban setting. The cost per acre for the Jumping Run Creek project is $25,085 (Table 5-1). The fee schedule for riparian wetland restoration is $24,000 per acre as defined in 15A NCAC 2R .0402. The NCWRP does not recommend a change in the fee charged for riparian wetland restoration at this time due to the fact that the costs per acre for the Jumping Run Creek riparian restoration is virtually the same as the existing fee structure.

Brackish or Salt Water Marsh Wetlands: The NCWRP has constructed three marsh restoration projects. The average marsh restoration costs for these projects is $101,148 per acre. Examining Table 5-1, the cost per acre for the Sturgeon City project is approximately $77,000. The other two marsh projects are significantly higher because the projects are smaller. These projects were also directly related to two demonstration projects for alternative methods of shoreline stabilization. As shown in Table 5-1, when comparing site restoration costs for Maritime Museum and Hammocks Beach, the construction costs associated with a rock sill are significantly higher than just removing a failing bulkhead, reshaping a shoreline and replanting the marsh. Two advantages of the rock sill over the bulkhead are that the sill is a one-time cost with no repair or replacement costs and it provides a natural marsh shoreline for habitat.

Economies of scale for restoration projects play a key role in the ultimate determination of final cost. The fee schedule for coastal marsh restoration is $120,000 per acre. The NCWRP does not recommend a change in the coastal marsh fee schedule at this time. If these projects had site acquisition costs, it would be safe to predict that the final cost per acre may exceed the current fee schedule. If a number of marsh restoration projects are undertaken in the future with site acquisition costs it may be necessary to revisit the marsh restoration fee schedule.

Non-riparian wetlands: The NCWRP does not have any non-riparian wetland restoration costs to report at this time. Based upon other non-riparian restoration projects constructed in the recent past as well as confirmation from sources in the private sector, no change in the fee schedule for non-riparian wetland restoration is recommended.

Cost of Stream Restoration Projects

The NCWRP has completed five stream restoration projects. These projects are differentiated by their location; either in an urban or rural area. The breakdown of stream restoration costs is presented in Table 5-2. The average cost of these projects based on a total stream length of 26,164 linear feet is $118 per linear foot. The two completed urban projects, Hominy Swamp and Price Park, averaged $215 per linear foot of stream. Payne Dairy, Stone Mountain and Brush Creek, all three rural projects, averaged $101 per linear foot.

Table 5-2. Stream Restoration Costs for NCWRP Projects

Project	Hominy Swamp	Price Park	Payne Dairy	Stone Mountain	Brush Creek
Site identification	$2,450.00	$1,690.00	$3,700.00	$5,200.00	$2,200.00
Site acquisition	$2,500.00	$62,526.00	$86,965.20	$0.00	$832.00
Project assessment-design	$123,703.85	$86,180.00	$112,453.50	$242.390.00	$109,170.00
Construction management	$12,600.00	$23,666.00	$84,422.00	$76,708.00	$62,460.00
Site restoration	$317,700.00	$132,277.00	$413,221.00	$667,360.00	$228,280.00
Post monitoring/ Maintenance*	$38,000.00	$38,000.00	$45,000.00	$45,000.00	$41,000.00
Long-term management	$3,000.00	$3,000.00	$7,500.00	$9,500.00	$5,250.00
Stream type	Warm/Urban	Warm/Urban	Warm/Rural	Cool/Rural	Cold/Rural
Length (ft)	2,232	1,710	7,800	10,622	3,800
Total cost	$499,953.85	$347,339.00	$753,261.70	$1,046,158.00	$449,192.00
Cost/linear foot	$223.99	$203.12	$96.57	$98.49	$118.21
Project status	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring

* Projected Cost for five-year period

In most urban stream settings the utility infrastructure is complex and must be addressed in design of the project. Sewer lines, power lines, fiber optic cables, and gas lines are examples of constraining urban conditions that must either be avoided or relocated during a stream project. These utility corridors also often influence the design and maintenance of riparian buffer restoration, which further increases project cost. Other common constraints in urban situations include designing streams with numerous road crossings, protecting city park equipment, and ensuring the project's compatibility with surrounding buildings and structures. These measures often require hydraulic and hydrologic modeling, which can represent a large portion of design costs.

Another significant cost-increasing factor in urban areas is that stream reaches suitable and available for restoration tend to be shorter than those in rural areas because of a higher density of land ownership and smaller parcel size. Shorter restoration projects lessen the "economies of scale" for urban projects since the initial mobilization of equipment in one of the larger costs in constructing stream restoration projects. The one-time cost of construction staging and delivering equipment becomes more economical as project length increases.

The NCWRP currently collects $125 per linear foot of required stream mitigation. This cost does not differentiate between urban and rural streams. Urban stream restoration costs averaged $215 per foot while rural streams averaged $101 per foot. The average of the five stream restoration projects is $118 per foot, $7 less than the mitigation fee. Predicting the projects to be done in the next two years, the Program estimates that 65 to 70 percent of the mitigation should be implemented in urban settings. This will greatly increase the average cost per foot of stream projects for the future.

One approach is to concentrate efforts in rural areas, even for urban stream impacts. The problem is that the urban stream function is not restored. Another approach to the urban/rural

stream restoration cost issue is to raise the fees for accepting compensatory mitigation requirements. The program recommends this approach and is currently pursuing a rule change for the fee schedule. To arrive at the appropriate stream restoration fee, the NCWRP is considering two possible approaches. Based on current mitigation requirement information, the first approach would assume a future pattern of stream projects consisting of 70 percent urban and 30 percent rural, take a weighted average, and recommend a fee of approximately $180 per linear foot of restoration. Another approach could be having two stream mitigation costs, one for urban impacts and another for rural impacts. Rural impacts could remain at $125 per foot while urban impacts could be $215 per foot. With either change, an annual cost escalator would have to be introduced to compensate for future rising costs in both materials and labor. The NCWRP recommends increasing the fee structure by one of the above methods.

Cost of Riparian Buffer Restoration Projects

The NCWRP has identified and is currently implementing a number of projects to meet compensatory mitigation requirements for riparian buffers. A total of 90.2, 10, and 30.6 acres have been identified in the Neuse, Tar-Pamlico, and Catawba River Basins, respectively. One project in the Neuse River Basin has been planted and is in the post-construction monitoring phase. A number of projects are in the design phase and should be constructed during FY 01-02.

The NCWRP receives $0.96 per square foot or $41,818 per acre for riparian buffer mitigation. The program is finding that successful riparian buffer restoration projects require considerable site preparation and maintenance causing the cost of restoration to increase significantly. In addition, the cost of land acquisition continues to increase. Currently, the NCWRP does not have enough data to determine if this fee adequately covers the costs associated with restoration of riparian buffers.

Cost Analysis of Private Mitigation Bank Restoration Projects

Mitigation bank surveys were mailed out to the bank sponsors identified in Appendix C, Table C-1. No responses were received from the bank sponsors. Therefore, no cost comparison between the NCWRP and private mitigation banks can be made for FY00-01. The program recommends referencing the 2000 Annual Report for a comparison between NCWRP restoration costs and private mitigation banking restoration costs.

There are seven approved private mitigation banks in North Carolina, as shown in Appendix C, Table C-1. In addition, Appendix C, Table C-2 includes proposed mitigation banks where there were meetings or site visits at some point during the fiscal year.

Appendix A
2000-01 Report to the U.S. Army Corps of Engineers

The North Carolina Wetlands Restoration Program
2001 Annual Report to the
U.S. Army Corps of Engineers
Wilmington District

As required by paragraph VI of the Memorandum of Understanding (MOU) between the U.S. Army Corps of Engineers, Wilmington District (Corps of Engineers) and the Department of Environment and Natural Resources, Wetlands Restoration Program (NCWRP) a report documenting the activities of the NCWRP related to the MOU has been prepared and is submitted to the Corps of Engineers for review.

Please note that the majority of the information concerning the activities of the NCWRP is documented in the main body and appendices of this report which has been prepared for the Environmental Review Commission of the North Carolina General Assembly as required by the enabling legislation for the NCWRP. The 2001 Annual Report, including this appendix, documents all activities of the NCWRP during FY2000-01 (July 1, 2000 through June 30, 2001). This appendix will address the specific reporting requirements found in Paragraphs V and VI of the MOU.

Memorandum of Understanding: Reporting Requirements

As specified in paragraphs V and VI of the MOU, the following information is presented in this report: the administrative costs associated with the MOU; a summary of monitoring results of projects that have been implemented; an accounting of the amount of restoration, creation, enhancement or preservation that has been conducted in each river basin by Catalog Unit; an accounting of the acres of mitigation required by Section 404 permits in each river basin by Catalog Unit; documentation concerning the implementation of projects in accordance with the time frame specified in the MOU; and an accounting of the funds that have been paid into the Wetlands Restoration Fund to satisfy the compensatory mitigation requirements of Section 404 permits.

Administrative Costs Associated with Implementation of the MOU

The majority of the administrative costs associated with implementation of the MOU during FY00-01 have been funded from the operating budget of the Wetlands Restoration Program. The NCWRP received $555,957 in funding during this period to support nine positions. Approximately 50 percent of staff time was allocated to activities directly related to implementation of the MOU.

Due to the increased amount of payments to the Wetlands Restoration Program it was necessary to hire additional staff to ensure that high quality compensatory mitigation projects are identified and implemented in accordance with the MOU. Four positions were established in the Wetlands Restoration Program to assist with the development of Local Watershed Plans. These plans will result in the identification and implementation of restoration projects. In addition, one position was established in the State Property Office to facilitate property acquisition. During FY00-01, $269,224 was allocated within Account 2981 to support these positions. Funds allocated for administrative support represented less than 2 percent of the payments received during FY00-01 (Figure 3-4). Administrative costs are incorporated within the fee structure, and will not reduce the funding available for compensatory mitigation projects.

Summary of Monitoring Results of Projects

As required by Paragraph IV F of the MOU, monitoring reports and as-built plans for each project will be submitted to the Corps of Engineers upon completion of each project. In addition, the

appropriate Corps of Engineers Regulatory Field Office is notified during the planning and design phase of each project to provide an opportunity for input during the design phase of the project.

The NCWRP currently has 8 projects in the monitoring phase (Table A-1). The monitoring reports will be submitted to the Corps of Engineers in November 2001 after the completion of the first growing season, with subsequent reports being submitted in November of each year for a period of five years, or until success criteria have been met. Monitoring reports for five of these eight projects will be submitted in November 2001 (Table A-1). The monitoring reports will contain hydrological, fluvial geomorphological data, and vegetative monitoring data as appropriate for each project as well as project specific data that is necessary to ensure success of the restoration project.

The format and content of site specific restoration plans, as-built plans, and monitoring reports is being discussed with the Corps of Engineers. Information concerning these documents will be posted on the NCWRP website (h2o.enr.state.nc.us/wrp) as agreements are reached.

Accounting of the Amount of Restoration, Creation, Enhancement or Preservation Conducted in Each River Basin by Catalog Unit

The NCWRP currently has 60 projects that are in various stages of implementation (Section 2). Collectively these 60 projects will restore approximately 596 acres of wetlands, 164,000 linear feet of stream channel, and 267 acres of riparian buffer in 12 different river basins. Fifty-seven of these projects, resulting in the restoration of 342 acres of wetlands and 164,162 linear feet of stream channel, have the potential to meet compensatory mitigation requirements of Section 404 permits assumed by the NCWRP. Sixteen of these projects were instituted by the end of FY2000-2001 (Table A-2) resulting in the restoration of 148 acres of wetlands and 54,364 linear feet of streams in seven river basins (Table A-3). As defined in the MOU, “instituted” means that a site has been identified, the property has been acquired, and a contractor has been assigned to design the project. An additional 41 projects that will result in the restoration of 194 acres of wetlands and 109,778 linear feet of streams have been identified and are in the process of being instituted (Table 2-2). At least 20 of these projects will be instituted during FY 01-02, the remainder will be instituted by the end of 2002.

Accounting of the Compensatory Mitigation Required by Section 404 Permits Assumed by NCWRP in Each River Basin by Catalog Unit

During FY00-01 the NCWRP assumed the compensatory mitigation requirements of 45 Section 404 permits. The compensatory mitigation requirements of these permits require the restoration of 62.27 acres of wetlands and 55,415 feet of stream channel and are distributed among 10 river basins and 15 catalog units (Table A-3).

Since the effective date of the MOU (November 4, 1998) the NCWRP has assumed the compensatory mitigation requirements of 75 Section 404 permits. The cumulative compensatory requirements of these permits require the restoration of 124.68 acres of wetlands and 129,466 linear feet of stream. The impacts accepted are distributed among 10 river basins and 16 catalog units (Table A-4).

Documentation Concerning the Implementation of Projects in Accordance with the Time Frame Specified in the MOU.

As stipulated in paragraph IV of the MOU, the NCWRP has a specified amount of time from the date a payment for compensatory mitigation is received to implement projects that satisfy the compensatory mitigation requirement. The long-term goal of the NCWRP is to identify and implement projects that are incorporated into watershed restoration strategies in advance of permitted impacts. Although significant progress has been made in achieving this goal (Section

2), the current emphasis of the NCWRP is compliance with the timeframes established by the MOU.

In accordance with the schedule established by the MOU, there were no Section 404 compensatory mitigation requirements due during FY 00-01. There are five Section 404 permits with mitigation requirements due by the end of 2001 (Table A-5). The mitigation requirements of three of these permits (199830659, 199502585, and 200021861) will be met by projects that meet the definition of instituted (Table A-5). Projects have been identified to meet the mitigation requirements of permits 199302820 and 199921172 (Table A-5). For the purposes of this report, "identified projects" means that acquisition/protection of the property has been agreed upon, however the property has not been formally conveyed to the state or other appropriate party. For a private property owner this would mean that the acquisition price had been agreed upon and an option to convey an interest in the property to the State had been signed. For local governments this would mean that a Memorandum of Agreement (MOA) had been signed that provides for the long-term protection of the property through conveying an easement to the State or other protection mechanism acceptable to the Corps of Engineers. In both cases the final property boundaries of the project will be surveyed and recorded upon completion of construction of the project. The process of designer selection is initiated upon signing of the option or MOA, therefore designer selection for identified projects has been initiated and in many cases has been completed for identified projects. There are areas, such as catalog unit 03040201 of the Yadkin River, catalog units 0303002, 0303004, 0303007 of the Cape Fear, and catalog unit 03050103 of the Catawba River Basins where a number of projects will be required to meet the assumed requirements (Table A-6). Many of these requirements will be met by projects that are being implemented (but do not currently meet the definition of "instituted") by NCWRP (Table 2-2).

During FY 01-02 the mitigation requirements for 51 permits will be due. The mitigation requirements of 30 of these permits will be met through projects that have been instituted or identified. The mitigation requirements for the remaining 21 permits will be due in FY 02-03. Projects have been instituted or identified to meet the requirements of 14 of those permits (Table A-5).

Actions have been initiated within each river basin and cataloging unit to ensure that the compensatory mitigation requirements of the remaining permits will be met within the specified time frame. These actions are summarized below:

- Roanoke River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. A sufficient number of potential sites have been evaluated to ensure these requirements will be met.
- Tar Pamlico River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. The NCWRP is also monitoring the potential for acquiring wetland and stream credits from the proposed Tar-Pam Wetland and Stream Mitigation Bank.
- Cape Fear River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. Cataloging Unit 03030002 is the area with the highest level of concern within this river basin. High quality riparian wetland restoration sites are difficult to identify, however there are opportunities to replace the wetland functions that will be presented to the Corps of Engineers for consideration. In addition, a Local Watershed Plan has been initiated in this cataloging unit. The initial watershed assessment will focus on the identification of high quality wetland restoration sites. Local Watershed Plans have also been initiated in Cataloging Units 03030004 and 03030007 of the Cape Fear river basin.

- Yadkin River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. A sufficient number of potential sites have been evaluated to ensure these requirements will be met. In addition, a Local Watershed Plan has been initiated in Cataloging Unit 03040101 of this basin.
- Lumber River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. A sufficient number of potential sites have been evaluated to ensure these requirements will be met.
- Catawba River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. In addition, a Local Watershed Plan has been initiated in this cataloging unit in cooperation with the City of Charlotte and Mecklenburg County. A sufficient number of potential sites have been evaluated to ensure these requirements will be met.
- New River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. A sufficient number of potential sites have been evaluated to ensure these requirements will be met.

French Broad River Basin: NCWRP has enlisted the assistance of the Natural Resources Conservation Service and the Division of Soil and Water Conservation to identify high quality restoration sites. A sufficient number of potential sites have been evaluated to ensure these requirements will be met. In addition, a Local Watershed Plan has been initiated in Cataloging Unit 06010105 of this basin.

Accounting of the Funds Paid into the Wetlands Restoration Fund to Satisfy the Compensatory Mitigation Requirements of Section 404 permits

As required by the MOU, the NCWRP has established a separate account, 2981 – Compensatory Mitigation within the DENR Wetlands Trust Fund as a repository for all payments made to the NCWRP for the purpose of satisfying Section 404 compensatory mitigation requirements. As reflected in Section 3 of the 2001 Annual Report, Compensatory Mitigation Account 2981 is a repository for payments that satisfy both Section 404 permit and 401 Water Quality Certification compensatory mitigation requirements. During FY00-01, payments to Account 2981 to satisfy the compensatory mitigation requirements of Section 404 permits totaled $9,197,500. These payments fulfill the compensatory mitigation requirements of 44 permits (Table A-7). Since the effective date of the MOU, November 4, 1998, 86 payments totaling $24,140,218.31 have been made to Account 2981 for the purpose of satisfying the compensatory mitigation requirements of Section 404 permits.

Please refer to Section 3 for an explanation of the use of the funds deposited into Account 2981 during FY 00-01.

Additional Actions Taken To Implement the Memorandum of Understanding

Establishment of the Advisory Team

The Memorandum of Understanding between DENR and the U.S. Army Corps of Engineers (see Appendix B, 1998 Annual Report) requires the NCWRP to convene an Advisory Team to review the progress of the NCWRP in meeting compensatory mitigation requirements of Section 404 permits. The appropriate state and federal agencies have been invited to appoint a representative to serve on the Advisory Team. It is anticipated that the first meeting of the Advisory Team will be held during January 2002.

Development of Reporting Formats for Site-Specific Restoration Plans and Monitoring Reports

The NCWRP has submitted recommendations to the Corps of Engineers for review and comment on the format for site-specific restoration plans and monitoring reports. These formats will be finalized during FY 01-02.

Quarterly Progress Reports

The NCWRP acknowledges the need to provide information to the Corps and other interested parties concerning the progress it has made in meeting assumed compensatory mitigation requirements of Section 404 projects. Although the Annual Report meets the reporting requirements of the Memorandum of Understanding the NCWRP will begin providing quarterly reports to the Corps in January 2002. These reports will be posted on the NCWRP web page for review by interested parties.

Table A-1. Project monitoring dates for constructed projects

PROJECT #	PROJECT NAME	RIVER BASIN	CATALOG UNIT	DATE CONSTRUCTION COMPLETED	DATE PLANTED (or to be planted)	FIRST MONITORING REPORT DUE
SM/YD/99	Stone Mountain	Yadkin	03040101	7//2000	2/2001	2001– 2005
SC/WO/99	Sturgeon City	White Oak	03030001	3/2001	3/2001	2001– 2005
HB/WO/99	Hammocks Beach	White Oak	03020106	8/2000	9/2000	2001– 2005
JRC/WO/99	Jumping Run Creek	White Oak	03020106	12/2000	1/2001	2001– 2005
PD/CT/99	Payne Dairy	Catawba	03050101	3/2001	3/2001	2001– 2005
JP/CF/99	Price Park	Cape Fear	03030002	7/2001	(12/2001)	2002– 2006
BC/NW/99	Brush Creek	New	05050001	6/2001	(12/2001)	2002– 2006
HS/NU/99	Hominy Swamp	Neuse	03030203	8/2001	(12/2001)	2002– 2006

Table A-2. Instituted Projects by River Basin and Cataloging Unit.

PROJECT #	PROJECT NAME	RIVER BASIN	FISCAL YEAR INITIATED	CATALOG UNIT	WETLANDS			STREAMS		
					CLASS[2]	ACRES	ACTIVITY[3]	CLASS	FEET	ACTIVITY[3]
HV/FB/01	High Vista	French Broad	00-01	06010105				Cold	3,500	R
HW/NU/99	Howell Woods	Neuse	99-00	03020201	PF01A	139	R,E,P	Warm		R,E
RSKP/NU/99	Kentwood Park	Neuse	00-01	03020201				Warm	3,000	R
RS/NU/99	Chavis Park	Neuse	00-01	03020201				Warm	2,500	R,E
SA/NU/01	Smith/Austin Creek	Neuse	00-01	03020201				Warm	9,500	R,E
RSBC/NU/00	Bertie Creek	Neuse	00-01	03020201				Warm	1,200	R
BB/CT/01	Brown Branch	Catawba	00-01	03050101				Cold	7,000	R
WP/CT/01	Wike Property	Catawba	00-01	03050101				Cool	2,300	R,E
SM/YD/99	Stone Mountain	Yadkin	99-00	03040101				Cool	10,622	R,E
JRC/WO/99	Jumping Run Crk	White Oak	99-00	03020106	PFO6C	4.4	R			
PD/CT/99	Payne Dairy	Catawba	99-00	03050101				Warm	7,000	R,E
SC/WO/99	Sturgeon City	White Oak	99-00	03030001	E2EM1P	3	R			
HB/WO/99	Hammock's Beach	White Oak	99-00	03020106	E2EM1N	2	R			
JP/CF/99	Price Park	Cape Fear	99-00	03030002				Warm	1,510	R
BC/NW/99	Brush Creek	New	99-00	05050001				Cool	4,000	R,E
HS/NU/99	Hominy Swamp	Neuse	99-00	03020203				Warm	2,232	R

Table A-3. Mitigation requirements assumed by Section 404 Permit Number, FY 2000-2001.

COE #	RIVER BASIN	CU #	PAYMENT DATE	DATE MITIGATION DUE[1]	AMOUNT REQUIRED				
					WETLANDS		STREAMS (ft)		
					Class[2]	Acres	Cold	Cool	Warm
199800680	Yadkin	03040201	7/17/00	7/17/02	Non-Rip	2.88			290
199930586	Catawba	03050103	9/18/00	9/18/02					941
199920833	Yadkin	03040101	9/18/00	9/18/02				12,760	
199601876	Neuse	03020201	9/18/00	9/18/02					920
199705476	Neuse	03020202	9/18/00	9/18/02					2,483
199601926	Yadkin	03040101	9/27/00	9/27/02				7,048	
200030264	Catawba	03050103	9/27/00	9/27/02	PF01A	5.94			1,054
199602650	Cape Fear	03030007	9/27/00	9/27/02					178
199601404	Roanoke	03010107	9/27/00	9/27/02	Riparian	5.43			770
200020203	Yadkin	03040101	10/24/00	10/24/02					499
199402773 & 200020184	Cape Fear	03030002	10/26/00	10/26/02					3,700
199702363	Catawba	03050101	10/26/00	10/26/02				3,664	
199931229 & 199931230	Catawba	03050101	10/26/00	10/26/02					190
199920857	New	05050001	10/31/00	10/31/02	Riparian	1.20			
199403552	Cape Fear	03030007	10/31/00	10/31/02	PF01A	7.00			8,516
199921172	Cape Fear	03030002	11/14/00	11/14/01					1,116
200021861	Neuse	03020201	12/7/00	12/7/01	Riparian	0.47			
200021484	Yadkin	03040101	1/22/01	1/22/02					406
200030806	Catawba	03050103	1/24/01	1/24/02					885
200100100	Cape Fear	03030005	1/24/01	1/24/02	Non-Rip	0.98			
199801874	Lumber	03040203	2/21/01	2/21/02	Riparian	1.60			
200000991	Cape Fear	03030004	2/27/01	2/27/02	Riparian	28.20			100
20001398	Yadkin	03040201	3/1/01	3/1/02	Riparian	0.52			
199920006	Cape Fear	03030002	3/9/01	3/9/02					495
199602420 & 200021006	Yadkin	03040101	3/27/01	3/27/02				3,642	
199921144	Neuse	03020201	3/27/01	3/27/02					592
200120287	Tar-Pamlico	03020101	4/19/01	4/19/02					212

Table A-3. Mitigation requirements assumed by Section 404 Permit Number, FY 2000-2001.

COE #	RIVER BASIN	CU #	PAYMENT DATE	DATE MITIGATION DUE[1]	AMOUNT REQUIRED				
					WETLANDS		STREAMS (ft)		
					Class[2]	Acres	Cold	Cool	Warm
200120090	New	05050001	4/19/01	4/19/02			410		
200120708	Neuse	03020201	4/19/01	4/19/02	Riparian Non-Rip	1.160, 0.430			1,249
19921332, 200120338 & 200120339	Neuse	03020201	5/21/01	5/21/02	Riparian	0.099			77
200021059	Cape Fear	03030002	5/21/01	5/21/02					1,368
200120770	Neuse	03020201	6/5/01	6/5/02	Riparian	0.658			
199603836	Cape Fear	03030007	6/6/01	6/6/02					875
200030933	Catawba	03050103	6/6/01	6/6/02					742
200110187 & 200110384	Tar-Pamlico	03020103	6/6/01	6/6/02					1,198
20020715 & 200021152	Neuse	03020201	6/11/01	6/11/02	PF01A	0.163			
200011238	Pasquotank	03020105	6/13/01	6/13/02	Non-Rip	5.260			
200120354	Neuse	03020201	6/29/01	6/29/02	Riparian	0.280			135
TOTAL						62.270	410	27,114	**26,508**

1 In accordance with Paragraph IV II. Of MOU, if payment received before 11/1/99, mitigation must be instituted 3 years from date payment received; if payment received 11/1/99-10/31/00, mitigation must be instituted 2 years from date payment received; and if payment received on or after 11/1/00, mitigation must be instituted 1 year from date payment received.

2 Cowardin et al. (1979) Classification of Wetlands and Deepwater Habitats of the United States.

Table A-4. Cumulative compensatory mitigation requirements accepted and instituted projects addressing these requirements 11/1/1998- 6/30/2001.

BASIN	CU #	AMOUNT REQUIRED					NCWRP PROJECTS				
		WETLANDS		STREAMS (Ft)			WETLANDS		STREAMS (Ft)		
		Class[1]	Acres	Cold	Cool	Warm	Class[1]	Acres	Cold	Cool	Warm
Roanoke	03010107	PF01A	3.00			770					
		Riparian	5.43								
Tar-Pamlico	03020101	PF04A	26.76			212					
	03020103					1,198					
Pasquotank	03020105	Non-Rip	5.26								
Neuse	03020201	Riparian	11.07			3,505					16,200
		Non-Rip	0.43								
		PF01A	2.45				PF01A	23.0			
Neuse	03020202										2,483
Cape Fear	03030002	PF01A	36.25			35,040					1,710
	03030004	PF01A	5.64			5,594					
		Riparian	28.20								
	03030005	Non-Rip	0.98								
	03030007	PF01A	7.00			9,674					
Yadkin	03040101				28,938	905				10,622	
	03040201	Riparian	0.52			290					
		Non-Rip	2.88								
Lumber	03040203	Riparian	4.21								
Catawba	03050101	PF01A	1.56	3,746	3,664	2,561	PF01A	3.0	7,000	2,300	7,800
	03050103	PF01A	9.84			29,150					
New	05050001	Riparian	1.20	410					3,800		
French Broad	06010105				3,809				3,500		
TOTAL			124.68	4,156	36,411	88,899		26.0	14,300	12,922	28,193
1 Cowardin et al. (1979) Classification of Wetlands and Deepwater Habitats of the United States											

Table A-5. Cumulative Section 404 compensatory mitigation requirements and NCWRP projects 11/1998-6/30/2001.

404 PERMIT #	PAYMENT DATE	DATE MITIGATION DUE[1]	WRP PROJECT # (recent projects)
199831147	2/15/99	2/15/02	HV/FB/01
199402528	5/26/99	5/26/02	SM/YD/99
199920734	7/16/99	7/16/02	LBC/CF/01
199820919	7/30/99	7/30/02	JP/CF/99
199502886	9/7/99	9/7/02	HDNW/CF/01
199500032	5/17/99	5/17/02	
199601917	5/20/99	5/20/02	HW/NU/99
199820154	10/5/99	10/5/02	HW/NU/99
199830188	10/5/99	10/5/02	PD/CT/99
199400662	10/5/99	10/5/02	
199930776	10/5/99	10/5/02	
199930585	10/5/99	10/5/02	PD/CT/99
199830659	12/2/99	12/2/01	HV/FB/01
199302820	12/2/99	12/2/01	CC/CF/01
199502585	12/2/99	12/2/01	HW/NU/99, LBC/CF/01
199603343	5/18/99	5/18/02	
199820937	1/4/00	1/4/02	
199831046	3/7/00	3/7/02	
199920901	4/25/00	4/25/02	LBC/CF/01
199931141	4/28/00	4/28/02	PD/CT/99 BB/CT/01
199901656	4/28/00	4/28/02	
199820670	5/1/00	5/1/02	SM/YD/99
199300197	5/1/00	5/1/02	
199930003	5/1/00	5/1/02	HV/FB/01
199920326	5/1/00	5/1/02	RS/NU/99
199501526	5/1/00	5/1/02	LBC/CF/01
199304806	6/12/00	6/12/02	
200020223 200020224 200020538	6/22/00	6/22/02	BB/CF/01
199800680	7/17/00	7/17/02	
199930586	9/18/00	9/18/02	
199920833	9/18/00	9/18/02	SM/YD/99
199601876	9/18/00	9/18/02	RS/NU/99
199601926	9/27/00	9/27/02	SM/YD/99, BBO/YD/01
200030264	9/27/00	9/27/02	
199602650	9/27/00	9/27/02	
199601404	9/27/00	9/27/02	
200020203	10/24/00	10/24/02	
199402773 & 200020184	10/26/00	10/26/02	SYD/CF/01
199702363	10/26/00	10/26/02	PD/CT/99
199931229 & 199931230	10/26/00	10/26/02	PD/CT/99
199920857	10/31/00	10/31/02	
199403552	10/31/00	10/31/02	
199921172	11/14/00	11/14/01	HILL/CF/01

Table A-5. Cumulative Section 404 compensatory mitigation requirements and NCWRP projects 11/1998-6/30/2001.

404 PERMIT #	PAYMENT DATE	DATE MITIGATION DUE[1]	WRP PROJECT # (recent projects)
200021861	12/7/00	12/7/01	HW/NU/99
199705476	1/22/01	1/22/02	BC/YD/01
200021484	1/22/01	1/22/02	
200030806	1/24/01	1/24/02	
200100100	1/24/01	1/24/02	
199801874	2/21/01	2/21/02	
200000991	2/27/01	2/27/02	
20001398	3/1/01	3/1/02	
199920006	3/9/01	3/9/02	GGC/CF/01
199602420 & 200021006	3/27/01	3/27/02	
199921144	3/27/01	3/27/02	RSKP/NU/99
200120287	4/19/01	4/19/02	
200120090	4/19/01	4/19/02	BC/NW/99
200120708	4/19/01	4/19/02	RSKP/NU/99
19921332, 200120338 & 200120339	5/21/01	5/21/02	HW/NU/99 RSKP/NU/99
200021059	5/21/01	5/21/02	BB/CF/01
200120770	6/5/01	6/5/02	HW/NU/99
199603836	6/6/01	6/6/02	
200030933	6/6/01	6/6/02	
200110187 & 200110384	6/6/01	6/6/02	
20020715 & 200021152	6/11/01	6/11/02	HW/NU/99
200011238	6/13/01	6/13/02	
200120354	6/29/01	6/29/02	HW/NU/99

1 In accordance with Paragraph IV II. of the MOU, if payment received before 11/1/99, mitigation must be instituted 3 years from date payment received; if payment received 11/1/99-10/31/00, mitigation must be instituted 2 years from date payment received; and if payment received on or after 11/1/00, mitigation must be instituted 1 year from date payment received.

Table A-6. Cumulative compensatory mitigation requirements and instituted and identified projects, by river basin and cataloging unit 11/1/1998- 6/30/2001.

BASIN	CU#	AMOUNT REQUIRED					NCWRP PROJECTS				
		WETLANDS		STREAMS(Ft)			WETLANDS		STREAMS(Ft)		
		Class[1]	Acres	Cold	Cool	Warm	Class[1]	Acres	Cold	Cool	Warm
Roanoke	03010107	PF01A	3.00			770					
		Riparian	5.43								
Tar-Pamlico	03020101	PF04A	26.76			212					
	03020103					1,198					
Pasquotank	03020105	Non-Rip	5.26								
Neuse	03020201	Riparian	11.07			3,505					16,200
		Non-Rip	0.43								
		PF01A	2.45				PF01A	23.0			
	03020202										2,483
Cape Fear	03030002	PF01A	36.25			35,040	PF01A	10			37,040
	03030004	PF01A	5.64			5,594					6,800
		Riparian	28.20				PF01A	75			
	03030005	Non-Rip	0.98								
	03030007	PF01A	7.00			9,674					
Yadkin	03040101				28,938	905				22,622	
	03040201	Riparian	0.52			290					
		Non-Rip	2.88								
Lumber	03040203	Riparian	4.21								
Catawba	03050101	PF01A	1.56	3,746	3,664	2,561	PF01A	3.0	7,000	2,300	7,800
	03050103	PF01A	9.84			29,150					
New	05050001	Riparian	1.20	410					3,800		
French Broad	06010105				3,809				3,500		
TOTAL			124.68	4,156	36,411	88,899		111	14,300	24,922	67,840

1 Cowardin et al. (1979), Classification of Wetlands and Deepwater Habitats of the United States

Table A-7. Section 404 Compensatory Mitigation Payments FY 2000-2001.

404 PERMIT #	PAYMENT AMOUNT	PAYMENT DATE	MITIGATION REQUIREMENTS
199800680	$ 72,250.00	7/17/00	2.88 ac. non-rip. and 290 lin. ft. - stream
199930586	$ 117,625.00	9/18/00	941 linear feet - stream
199920833	$ 1,595,000.00	9/18/00	12,760 linear feet - stream
199601876	$ 115,000.00	9/18/00	920 linear feet - stream
199601926	$ 881,000.00	9/27/00	7,048 linear feet - stream
200030264	$ 275,750.00	9/27/00	6.0 ac. rip/1,054 lin. ft. stream
199602650	$ 22,250.00	9/27/00	178 linear feet - stream
199601404	$ 228,250.00	9/27/00	5.5 ac. rip/770 lin. ft. stream
200020203	$ 62,375.00	10/24/00	449 linear feet - stream
199705476	$ 310,375.00	9/28/00	2,483 linear feet - stream
199402773 & 200020184	$ 462,500.00	10/26/00	3,700 linear feet - stream
199702363	$ 458,000.00	10/26/00	3,664 linear feet - stream
199931229 & 199931230	$ 23,750.00	10/26/00	190 linear feet - stream
200021860	$ 37,500.00	10/26/00	300 linear feet - stream
199920857	$ 30,000.00	10/31/00	1.25 acres - riparian
199403552	$ 1,232,500.00	10/31/00	7 ac. rip/8,516 lin. ft. stream
199921172	$ 139,500.00	11/14/00	1,116 linear feet - stream
199930003	$ 6,000.00	12/2/00	.14 acre - riparian
200021861	$ 12,000.00	12/7/00	.50 acre - riparian
199417015	$ 363,250.00	12/14/01	2906 linear feet - stream
199705476	$ 310,375.00	1/22/01	2,483 linear feet - stream
200021484 thru 200021486	$ 50,750.00	1/22/01	406 linear feet - stream
200030806	$ 110,625.00	1/24/01	885 linear feet - stream
200100100	$ 12,000.00	1/24/01	1 acre - non-riparian
199801874	$ 42,000.00	2/21/01	1.75 acres of riparian
200000991	$ 690,500.00	2/27/01	100 lin. ft./28.25 ac. rip
20001398	$ 18,000.00	3/1/01	.75 acre - riparian
199920006	$ 61,875.00	3/9/01	495 linear feet - stream
199602420 & 200021006	$ 455,250.00	3/27/01	3,642 linear feet - stream
199921144	$ 74,000.00	3/27/01	592 linear feet - stream
200120287 & 200120288	$ 26,500.00	4/19/01	212 linear feet - stream
200120090	$ 51,250.00	4/19/01	410 linear feet - stream
200120708	$ 192,125.00	4/19/01	1,249 stream, 1.16 rip and 0.43 non-rip
19921332, 200120338 & 200120339	$ 15,625.00	5/21/01	.0989 acres rip and 77 linear feet stream
200021059	$ 171,000.00	5/21/01	1,368 linear feet - stream
200120770	$ 18,000.00	6/5/01	0.658 acres riparian
199603836	$ 109,375.00	6/6/01	875 linear feet - stream

Table A-7. Section 404 Compensatory Mitigation Payments FY 2000-2001.

404 PERMIT #	PAYMENT AMOUNT	PAYMENT DATE	MITIGATION REQUIREMENTS
200030933	$ 92,750.00	6/6/01	742 linear feet - stream
200110187 & 200110384	$ 149,750.00	6/6/01	1,198 linear feet - stream
20020715 & 200021152	$ 6,000.00	6/11/01	.228 acres riparian
200011238	$ 66,000.00	6/13/01	5.26 acres non-riparian
200120354	$ 28,875.00	6/29/01	.28 ac rip, 135 lf stream and 43,123 buffer
Total	$ 9,197,500.00		
Riparian wetlands = rip; Non-riparian wetlands = non-rip			

Appendix B
2001 Department of Transportation Report

Department of Environment and Natural Resources and Department of Transportation Memorandum of Understanding

Introduction

On July 7, 1999, the Secretaries of the Department of Environment and Natural Resources and the Department of Transportation signed a Memorandum of Understanding (MOU) designed to help address future Department of Transportation compensatory mitigation associated with transportation improvement projects. The objective of this agreement is to facilitate the permitting of transportation improvement projects while reducing the associated environmental impacts. This objective will be accomplished through the protection of existing natural resources through increased avoidance and minimization of impacts to wetlands and riparian areas, restoring watersheds by incorporating compensatory mitigation requirements into comprehensive watershed restoration strategies, and implementing compensatory mitigation projects in advance of the permitted impacts. The MOU has several components that both departments are implementing. Through this agreement, the Department of Transportation provides funding to the Wetlands Restoration Program for the development of Local Watershed Plans within areas of the state where compensatory mitigation needs are anticipated based on the Transportation Improvement Plan. In exchange for these funds the Department of Transportation will be provided with compensatory mitigation credits equivalent to the value of their annual payment of $2.5 million.

The second installment of this payment to the Wetlands Trust Fund was received from the Department of Transportation in July 2000. As of June 30, 2001 $325,185.95 had been spent or encumbered on the development of Local Watershed Plans in the lower Cape Fear (New Hanover County) and French Broad (Henderson County) river basins.

PROGRESS IN IMPLEMENTATION OF THE MEMORANDUM OF UNDERSTANDING

Development of Local Watershed Plans

Ten Local Watershed Plans have been initiated in seven different river basins across the state (see Table 2-1 in Section 2 of this report). These plans will be used to provide compensatory mitigation for transportation improvement projects scheduled for construction in 2003 – 2005.

There are seven basic steps in the process of Local Watershed Planning. Each step is described below along with an estimate of the amount of time each step takes.

Watershed Selection – This step includes reviewing projected stream and wetland impact figures provided by DOT and selecting the Regional Watersheds (8-digit cataloging units) that will be the focus of a Local Watershed Planning initiative. Once agreement has been reached on the Regional Watersheds, NCWRP staff analyze the smaller, Local Watersheds within the Regional Watersheds to determine the areas that are exhibiting habitat or water quality problems that could benefit from Local Watershed Planning. Then, feedback from other environmental resource professionals on the draft local watershed selections is sought. Final choices are made and presented to the DOT and regulatory agencies for consideration and feedback. This step takes approximately six months.

Stakeholder Involvement – This activity is ongoing throughout the entire process. Local resource professionals, governments, environmental groups and citizens are asked to help direct the focus of the technical assessment and fashion the recommendations of the plan.

Contractor Selection – Once the watershed has been selected, the NCWRP issues a Request for Services for the technical watershed assessment (an example RFS is included at the end of this appendix). Letters of Interest are received, reviewed and ranked. The top three choices are

presented to the State Building Commission. If they approve those choices, the NCWRP begins negotiating scope and cost with the top choice. Once scope and cost have been agreed upon, a contract is executed. This step takes approximately four months.

Technical Watershed Assessment -- The contractor begins conducting technical analyses of the watershed to identify habitat and water quality problems in the watershed. Water quality monitoring and stream assessments are also conducted during this step. Based on the information gathered and with the support of watershed models, the best solutions that can be applied are identified. This step takes approximately 12 months.

Plan Development – Based on the technical information and input from local stakeholders, a comprehensive watershed plan is developed. The plan can include recommendations for a variety of initiatives and projects, including those that can be used toward meeting compensatory mitigation requirements. This step takes between three and six months.

Presentation to the Watershed Restoration Policy Committee – A comprehensive package of project recommendations that has been developed based on technical information and local input is presented to the WRPC. The Committee decides which projects can be used toward compensatory mitigation. This step lasts approximately two months.

Project Implementation – Once a determination has been made by the WRPC, projects can be implemented. For those projects and initiatives that can not be funded with compensatory mitigation dollars, other resources are sought for implementation. The amount of time spent on this phase will be variable.

Steps 3 – 6 of the entire Local Watershed Planning process are designed to span a total of two years.

The stage of development of each of the initiated plans is shown in Table B-1 below.

Table B-1. The stage of development of each Local Watershed Planning initiative with respect to the major milestones of the overall process

Watershed and River Basin	Watershed Selection	Stakeholder Involvement	Contractor Selection	Technical Watershed Assessment	Plan Development	Plan Presented to WRPC	Project Implementation
New Hanover Co. Lower Cape Fear							
Mud Creek French Broad							
Ellerbe Creek and Lake Rogers - Upper Neuse							
Troublesome Creek Upper Cape Fear							
Crane Creek Middle Cape Fear							
Charlotte/Mecklenburg Catawba							
Pasquotank River Pasquotank							
Clarke Creek Lower Yadkin-Pee Dee							
W.Kerr Reservoir Upper Yadkin-Pee Dee							
Upper New River White Oak							

Increased Avoidance and Minimization of Impacts

The Department of Environment and Natural Resources convened a working group in February 2001 consisting of representatives of state and federal agencies involved in the Section 404 permitting process to identify high quality wetland and riparian areas throughout North Carolina. The purpose of this initiative is to provide the Department of Transportation with information on existing resources that can be used in the early planning stages of highway project development to increase avoidance and minimization of impacts to these high quality resources. A draft list and description of habitat types has been prepared and is being reviewed by the agencies. When approved by all participating agencies, the list will be presented to the Department of Transportation for review and comment. These comments will be incorporated into the final document that will be completed during FY 01-02.

Establishment of Watershed Restoration Policy Committee

The purpose of the Watershed Restoration Policy Committee is to review the Local Watershed Plans to identify those components that could be used to satisfy compensatory mitigation requirements. In addition to this committee, the Memorandum of Understanding between DENR and the U.S. Army Corps of Engineers (see Appendix B, 1998 Annual Report) requires the NCWRP to convene an advisory team to review the progress of the NCWRP in meeting compensatory mitigation requirements of Section 404 permits. The appropriate state and federal agencies have been invited to appoint a representative to serve on the Advisory Team. During the first meeting of the Advisory Team the representatives will be requested to consider combining the Watershed Restoration Policy Committee and the Advisory Team.

REIMBURSEMENT AGREEMENT REPORTING REQUIREMENTS

Expenditures

The NCWRP has received a total of $5 million from the DOT for the development of Local Watershed Plans. Of the available funds, $352,185.95 was spent or encumbered on the development of Local Watershed Plans during FY 00-01. In addition to these funds, the equivalent of six positions within the Wetlands Restoration Program were involved in the development of Local Watershed Plans. During FY 01-02 it is anticipated that approximately $2.45 million will be encumbered for further development of the plans that have been initiated.

Development of Local Watershed Plans

The status of the development of Local Watershed Plans has been presented at the beginning of this report for the DOT and at the beginning of Section 2 of this annual report.

Compensatory Mitigation Projects

The identification of compensatory mitigation projects is the last step in the development of the Local Watershed Plans. No plans had been completed at the end of FY 00-01 therefore no projects have been formally identified. However, several projects have been identified through the planning process but will not be reported until the plan is complete.

DOT Compensatory Mitigation Requirements Accepted by NCWRP

One of the purposes of the Memorandum of Understanding is for DENR to provide assistance to the DOT in meeting compensatory mitigation requirements of Section 404 permits issued for transportation improvement projects. Since 1997, the NCWRP has assumed all or portions of the compensatory mitigation requirements for 52 transportation improvement projects (Table B-2). The compensatory mitigation requirements for these projects involve the restoration of 119.6

acres of wetlands and 153,218 linear feet of stream channel and are distributed throughout 10 river basins.

In addition to the compensatory mitigation requirements for Section 404 permits, the NCWRP provides riparian buffer mitigation for DOT in the Tar-Pamlico, Neuse and Catawba river basins. Since 1999, the buffer mitigation requirements for three projects involving 37.44 acres of buffer restoration in the Neuse River Basin have been assumed by the NCWRP.

Table B-2. Payments accepted from DOT for compensatory mitigation

DWQ #	TIP #	PAYMENT AMOUNT	PAYMENT DATE	MITIGATION REQUIREMENTS	COUNTY
970440	R-2116B	$32,500	10/7/1997	260 linear feet - stream	Buncombe
970288	U-2720	$72,000	5/18/1999	3 ac. - RW	Halifax
980716	B-3392	$66,000	5/18/1999	2.75 ac. - RW	Robeson
960319	R-2000EA/EB	$1,290,250	5/21/1999	10,226 linear feet/1 ac. NRW	Wake
980071	I-2511BB	$19,375	5/21/1999	155 linear feet - stream	Rowan
980321	U-2801B	$23,625	5/21/1999	189 linear feet - stream	Buncombe
980403	R-2425C	$60,000	5/21/1999	480 linear feet - stream	Wake
980423	R-2237A	$30,000	5/21/1999	1.25 ac. - RW	Caldwell
980604	R-2923C	$166,000	5/21/1999	1,328 linear feet - stream	Yadkin
980667	R-2001C	$20,000	5/21/1999	160 linear feet - stream	Lenoir
980771	R-2120A	$405,000	5/26/1999	3.25 ac. NRW/2,928 lin. ft. stream	Yadkin
980330	R-2541	$90,000	8/18/1999	3.75 ac. - RW	Wake
951250	R-0512	$26,250	9/7/1999	210 linear feet - stream	Richmond
980349	I-2402	$3,690,750	9/7/1999	29.46 ac. RW/23,862 lin. ft. stream	Guilford
970856	R-2551	$130,875	9/9/1999	1,047 linear feet - stream	Pasquotank
980133	I-0100	$107,750	9/9/1999	862 linear feet - stream	Buncombe
981266	U-2211A	$274,875	10/5/1999	2,199 linear feet - stream	Caldwell
990083	I-306DC	$204,000	10/5/1999	8.5 ac. - RW	Wake
990337	R-2248 AC/AD	$1,634,000	10/5/1999	5.25 ac. RW/24,128 lin.ft. stream	Mecklenburg
990563	I-907B	$21,500	10/5/1999	172 linear feet - stream	Burke/ McDowell
970501	U-2218	$324,000	10/6/1999	27 ac. - NRW	Edgecombe
990339	R-2238	$335,750	12/2/1999	2,686 linear feet - stream	Cumberland/ Harnett
990490	I-2812	$57,500	12/2/1999	460 linear feet - stream	Johnston
990661	R-2214B	$218,000	12/2/1999	1,744 linear feet - stream	Henderson
980491	U-401	$97,500	12/3/1999	780 linear feet - stream	Buncombe
980256	R-2596A	$510,250	4/28/2000	1.75 ac. RW/3,746 lin. ft. stream	McDowell
980337	X-2D	$143,500	4/28/2000	1,148 linear feet - stream	Cumberland
990661	R-2214B	$6,000	4/28/2000	.25 ac. - RW	Henderson
990919	U-3116	$13,125	4/28/2000	105 linear feet - stream	New Hanover

Table B-2. Payments accepted from DOT for compensatory mitigation

DWQ #	TIP #	PAYMENT AMOUNT	PAYMENT DATE	MITIGATION REQUIREMENTS	COUNTY
980260	R-2247	$320,000	5/1/2000	2,560 linear feet - stream	Forsyth
990930	U-2406	$532,750	5/1/2000	4.0 ac. RW/3,494 lin. ft. stream	Alamance
	R-2905	$66,500	5/1/2000	532 linear feet - stream	Wake
990340	R-2562 AA/AB	$207,500	6/12/2000	1,660 linear feet -stream	Cumberland
991201	U-2804B	$115,000	9/18/2000	920 linear feet - stream	Wake
990248	U-2512BA	$117,625	9/18/2000	941 linear feet - stream	Mecklenburg
990929	R-2001B	$310,375	9/18/2000	2,483 linear feet - stream	Lenoir
990337	R-2248 AC/AD	$1,508,000	9/18/2000	12,064 linear feet - stream	Mecklenburg
990942	R-2239C	$1,595,000	9/18/2000	12,760 linear feet - stream	Yadkin/Wilkes
#000105	R-2204A	$22,250	9/27/2000	178 linear feet - stream	Duplin
#000505	R-2112BB	$228,250	9/27/2000	5.5 ac. RW and 770 lin. ft. stream	Martin
991469	U-3307	$275,750	9/27/2000	6.0 ac. RW and 1,054 lin. ft. stream	Mecklenburg
990995	R-2240	$881,000	9/27/2000	7,048 linear feet - stream	Wilkes
	U-2530B	$23,750	10/26/2000	190 lin. ft. stream	Catawba
970478	R-0218A	$87,000	10/26/2000	7.25 ac. - NRW	Pitt
#000614	U-2404B	$458,000	10/26/2000	3,664 lin. ft. stream	Catawba
#000552	R-0942 A/B/CA	$462,500	10/26/2000	3,700 lin. ft. stream	Orange/ Chatham
990491	R-2302	$30,000	10/31/2000	1.25 ac. - RW	Alleghany
#000072	R-2633C	$1,232,500	10/31/2000	7 ac. rip and 8,516 lin. ft. stream	New Hanover
#000943	U-2827A	$50,750	1/22/2001	406 linear feet - stream	Forsyth
990929	R-2001B	$310,375	1/22/2001	2,483 linear feet -stream	Lenoir
#001128	U-2582B	$74,000	3/27/2001	592 linear feet - stream	Wake
#000805	R-2604	$455,250	3/27/2001	3,642 linear feet - stream	Surry/Wilkes
#001040	I-306DB	$6,000	4/19/2001	.50 ac. - NRW	Durham
#001543	B-2974	$26,500	4/19/2001	212 linear feet - stream	Granville
#001040	I-306DB	$30,000	4/19/2001	1.25 ac. - RW	Durham
#001236	R-2100C	$51,250	4/19/2001	410 linear feet - stream	Ashe
#001040	I-306DB	$156,125	4/19/2001	1,249 linear feet - stream	Durham
#001040	I-306DB	$996,095	4/19/2001	1,037,599.2 square feet - buffer	Durham
#000577	U-2512A	$92,750	6/6/2001	742 linear feet - stream	Mecklenburg
#001520	R-2188	$149,750	6/6/2001	1,198 linear feet - stream	Pitt/ Edgecombe
990413	R-1030	$343,406	6/6/2001	8.25 ac. buffers	Wayne/ Wilson
#001045	U-92A/B	$109,375	6/6/2001	875 linear feet - stream	New Hanover

RW = riparian wetland; NRW=non-riparian wetland

NCWRP Request for Services

Project Name and Description: Technical Assessments of Five Watersheds in North Carolina

The NCWRP is initiating a Local Watershed Planning process in five watersheds across the state. The watersheds of focus will range in size from two to five 14-digit hydrologic units that are adjacent to each other. A critical component of this planning process is a technical assessment of each watershed that identifies sources of pollution and lays the groundwork for the development of solutions to identified problems. The technical information generated will be used to identify stream, wetland and riparian buffer restoration projects that could be used for compensatory mitigation and to identify other projects and efforts that would contribute to the protection and improvement of water quality and habitat. The assessments will include the following broad steps:

Identification and compilation of existing data and information that relates to water quality and habitat for the entire watershed (this could include sampling data, land cover information, hydrological conditions, future growth trends, and existing projects or efforts to address water quality issues);
Development of detailed GIS maps for the watershed;
Detailed sampling and field analysis of specific sections of the watershed chosen based on and evaluation of information and data;
Identification of specific parcels for potential wetland, stream and/or riparian buffer restoration projects that could be used for compensatory mitigation and other potential water quality improvement projects (i.e. best management practices, stormwater retrofits, etc.)
When applicable, development or application of modeling tools to predict the impact of various restoration projects or management strategies.

The NCWRP is seeking to contract with up to five environmental consulting firms to accomplish the described work. Geographically, work will occur in the Yadkin, Cape Fear, Pasquotank and Catawba river basins. Appendix B, Table B-3 identifies the specific areas where Local Watershed Planning will occur. In addition to the assessment, the contractor may be required to interact with local citizens or governments since the Local Watershed Planning initiative includes a strong stakeholder component. Along with a letter of interest, interested contractors must submit a list of references that includes local governments within the areas of focus with which the contractor has worked, and may indicate in which areas they have an interest in working.

Table B-3. Local Watershed Planning Initiatives

River Basin	8-Digit Cataloging Unit	14-Digit Hydrologic Unit	Local Watershed Name
Upper Cape Fear	03030002	0303000210010 & 0303000210030	Troublesome and Little Troublesome Creeks
Middle Cape Fear	03030004	0303000470010 & 0303000470020	Crane Creek
Catawba	03050101 & 03050103	03050101170010 03050101170020 03050103020020 03050103020030 & 03050103020050	McDowell Creek, Long, Sugar / Irwin, Little Sugar, and McAlpine creeks
Pasquotank	03010205	03010205050010 03010205010020 & 03010205040010	Pasquotank River
Lower Yadkin	03040105	0304010510020 & 0304010510010	West Branch of Rocky River, Clarke & Coddle Creek

Qualifications: The following qualifications will be important in contractor selection:

- Familiarity with the detailed characterization of watersheds at the 14-digit H-U level;
- Experience in the development and application of watershed-based models to determine future water quality conditions under different management scenarios;
- Ability to identify high quality restoration sites and water quality improvement projects;
- Ability to interact with stakeholders; and
- Proficiency with GIS systems and map development.

In addition, the Wetlands Restoration Program requests that each applicant respond to the following scenario:

Please provide a detailed approach for evaluating a watershed (at the 14-digit hydrologic unit level) to characterize water quality and habitat issues and identify a multitude of projects (restoration projects, best management practices, stormwater management, etc.) and efforts that together will comprise a management plan for the watershed. Please describe how your firm would approach this effort in both a rural and urban watershed.

Appendix C
Private Mitigation Banks

NCWRP Oversight Role of Private Mitigation Banks

The federal guidance on mitigation banks defines mitigation banking as wetland restoration, creation, enhancement or, in exceptional circumstances, preservation undertaken expressly to mitigate for unavoidable wetland losses in advance of development impacts, to be used when environmentally beneficial mitigation cannot be performed on-site. The mitigation banking option provides the holder of a 401 Water Quality Certification or 404 Permit with the opportunity to meet compensatory mitigation requirements through the purchase of 'credits' from a wetlands mitigation bank.

The general statute governing the Wetlands Restoration Program (N.C.G.S. 143-214.8) states that one of components of the program will be the oversight of private mitigation banks to facilitate the components of the Wetlands Restoration Program. The oversight is primarily through coordination of Division of Water Quality comments regarding proposed private mitigation banks to the mitigation bank review team (MBRT). In this role, the NCWRP staff coordinates the response of the division to proposed private mitigation bank restoration plans, mitigation banking instruments, and monitoring reports.

Participation on Mitigation Bank Review Teams

In FY 2000-2001, the NCWRP participated in the review of eight private mitigation banks (Table C-2). For the above private mitigation banks, the NCWRP staff attended MBRT meetings, visited the sites, reviewed restoration plans and mitigation banking instruments.

Mitigation Banks Approved During FY 2000-2001

During FY 2000-2001, the Mitigation Banking Instrument for one private mitigation bank (Neu-Con Mitigation Bank) was approved.

Table C-1. Approved Mitigation Banks in North Carolina

Mitigation Bank Name[1]	County	River Basin	Cataloging Unit	Restoration Type	Area or Length	Sponsor
Scuppernong River Corridor Mitigation Bank	Tyrrell	Pasquotank	03010205	Non-Riparian	R: 19 ac. E: 19 ac.	The Triangle Group
Great Dismal Swamp Restoration Bank	Pasquotank, Perquimans	Pasquotank	03010205	Non-Riparian	R: 1,025 ac. P: 3,475 ac.	Great Dismal Swamp Mitigation Bank, LLC
Hidden Lake Mitigation Bank	Tyrrell	Pasquotank	03010205	Non-Riparian	R: 46 ac. E: 13 ac. P: 759 ac	The Triangle Group
Barra Farms Cape Fear Regional Mitigation Bank	Cumberland	Cape Fear	03030005	Non-Riparian Stream	R: 451 ac. E: 172 ac. R: 2,400 ft.	EcoBank, LLC
Greater Sandy Run Wetland Mitigation Bank	Onslow	White Oak	03030001	Non-Riparian	R: 1,250.5 ac	Camp LeJeune Marine Base
Flat Swamp Wetland Mitigation and Stream Restoration Bank	Craven	Neuse	03020202	Non-Riparian Stream	R: 339 ac. E: 47 ac. R: 9,000 ft.	The Triangle Group
NEU-CON Mitigation Bank	Lenoir, Jones, Greene	Neuse	03020202 03020203 03020204	Non-Riparian Stream	R: 2,252 ac. C: 5 ac. E: 27 ac. P: 782 ac. R: 550 ft.	Environmental Bank and Exchange, LLC

R=Restoration C=Creation P=Preservation E=Enhancement

1 The Banks included in this Table have a Mitigation Banking Instrument that has been signed by some or all of the Federal and State review agencies.

The Triangle Group
1001 Capability Dr. Suite 312
Raleigh, N.C. 27606
(919) 782-3792

EcoBank, LLC
1555 Howell Branch Rd.
Winter Park, FL 32789
(407) 629-6044

Great Dismal Mitigation Bank, LLC
Winthrop, Stimson, Putnam & Roberts
1133 Connecticut Ave. NW
Washington, D.C. 20036

Environmental Banc & Exchange, LLC.
1119-M Whisperwood Court
Greensboro, N.C. 27104
(336) 851-5902

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Table C-2. Proposed Mitigation Banks in North Carolina

Mitigation Bank Name	County	River Basin	Cataloging Unit	Restoration Type	Proposed Area or Length	MBRT Status (Initial Letter; Last meeting)	MBI Status	Sponsor
Bear Creek-Mill Branch Mitigation Bank	Lenoir	Neuse	03020202	Riparian	R: 88 ac. E: 34 ac. P: 300 ac.	(6-10-99) (10-19-99)	1	Restoration Systems , LLC.
Croatan National Forest Mitigation Bank	Craven	Neuse	03020204	Non-Riparian	R: 1,080 ac. E: 2,050 ac. P: 650 ac.	(1-29-99) (5-14-01)	1	Department of Transportation
Hofmann Forest Wetland Mitigation Bank	Onslow	White Oak	03030001	Non-Riparian	R: 400 ac. P: 4,000 ac.	(11-16-99) (5-2-00)	2	North Carolina Forestry Foundation
Vann Swamp Wetland Mitigation Bank	Washington Beaufort	Tar-Pamlico	03020104	Non-Riparian	R: 785 ac. E: 1,570 ac.	(none) (10-26-00)	2	NC Department of Transportation
Black River-Yonder Farm Mitigation Bank	Bladen	Cape Fear	03030006	Riparian	R: 90 ac.	(none) (4-23-01)	2	Resource Systems, LLC.
Mt Vernon Springs Wetland Mitigation Bank	Chatham	Cape Fear	03030003	Riparian Stream	R: 5.2 ac. C: 15.6 ac. R: 3,700 ft.	(none) (11-28-00)	3	Soil & Environmental Consultants, Inc.
Pott Creek Mitigation Bank	Lincoln	Catawba	03050102	Riparian Non-Riparian Stream	R: 11.2 ac. R: 40 ac. R: 3,000 ft.	(none) (3-28-01)	2	Marsh Resources, Inc.
Tar-Pam Wetland and Stream Mitigation Bank	Halifax	Tar-Pamlico	03020102	Riparian Stream	R: 180 ac. E: 65 ac. P: 70 ac. R: 12,000 ft.	(9-22-00) (11-28-00)	1	Environmental Bank and Exchange, LLC

1 MBI is in final stages of review but unsigned
2 MBI has not been developed
3 Bank discontinued

R = Restoration
C = Creation
P = Preservation
E = Enhancement

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The following section represents the cover letter and survey that was sent out to private mitigation bankers:

NORTH CAROLINA PRIVATE MITIGATION BANK SURVEY

The North Carolina Wetlands Restoration Program (NCWRP) is requesting restoration cost and credit inventory information for private mitigation banks in North Carolina. This information will allow us to analyze our costs and accurately determine our future fee structure. General Statute 143-214.13 refers to the Wetlands Restoration Program's reporting requirement regarding our own costs and a cost comparison with private mitigation banks operating in North Carolina. The statue is listed below:

143-214.13. Wetlands Restoration Program: reporting requirement

The Department of Environment, Health, and Natural Resources shall report each year by November 1 to the Environmental Review Commission regarding its progress in implementing the Wetlands Restoration Program and its use of the funds in the Wetlands Restoration Fund. The report shall document statewide wetlands losses and gains and compensatory mitigation performed under G.S. 143-214.8 through G.S. 143-214.12. The report shall also provide an accounting of receipts and disbursements of the Wetlands Restoration Fund, an analysis of the per-acre cost of wetlands restoration, and a cost comparison on a per-acre basis between the State's Wetland Restoration Program and private mitigation banks. The Department shall also send a copy of its report to the Fiscal Research Division of the General Assembly.

Added by Laws 1996, 2 Ex.Sess., c. 18, s 27.4(a), eff. July 1, 1996.

If you are a bank sponsor that has more than one bank operating in North Carolina, we request that you fill a sheet for each bank.

We ask that you provide us the restoration cost data by September 14, 2001. Thank you very much.

Mail to: NC Wetlands Restoration Program
Attention: Mac Haupt
1619 Mail Service Center

Raleigh, N.C. 27699-1619

Private Mitigation Bank Survey

1. What is the cost of wetland restoration (cost/acre) for the following categories:
Land purchase_____
Pre-Monitoring_____
Design_____
Construction_____
Hydrological Modifications (include cost of structures)_____
_____
Planting (include cost of vegetation)_____
_____
Post-Monitoring_____
Long-term management_____

2. What is the cost of stream restoration (cost/linear foot) for the following categories:
Land purchase_____
Pre-Monitoring_____
Design_____
Construction_____
Hydrological Modifications (include cost of structures) _____

_____
Planting (include cost of vegetation)_____
_____

Post-Monitoring_____
Long-term management_____

3. Inventory of Bank Credits

Total Credits of Bank (the number bank started with, e.g. 20 non-riparian restoration credits, 10 non-riparian enhancement credits)

Credits Sold_____
_____

Remaining Credits_____
_____

4. What is the Cost of a Credit in your Bank (What you charge to sell 1 credit)

Salt-water wetland_____
Riparian wetland_____
Non-Riparian wetland_____
Stream_____

Appendix D
Wetland and Stream Restoration Survey

Table D1. Results of the FY00-01 N.C. Wetlands and Streams Restoration Survey.

Project Name	Program/Agency Name	River Basin	Stream Length -- feet			Wetlands - acres				Buffers - acres	
			R	E	P	R	E	P	C	R	P
Brittain	USDA NRCS	Broad				2.00					
Pharr Yarns - Pinhook Donation	Catawba Lands Conservancy	Catawba									12.53
Pharr Yarns - Pinhook Peninsula	Catawba Lands Conservancy	Catawba			6,994.00			61.90			
Pharr - Spencer Mountain Wetland	Catawba Lands Conservancy	Catawba			5,644.00			5.00			98.10
Brandmaier Property	Catawba Lands Conservancy	Catawba			1,894.00						14.15
Wallace Easement	Catawba Lands Conservancy	Catawba			871.00						33.70
Viles Property II	Catawba Lands Conservancy	Catawba			2,433.00						65.00
Viles Property I	Catawba Lands Conservancy	Catawba			18,247.00						218.60
Rhyne Conservation Preserve	Catawba Lands Conservancy	Catawba			13,660.00						220.00
Rhyne Preserve Additions	Catawba Lands Conservancy	Catawba			642.00						13.30
Meakin Property	Catawba Lands Conservancy	Catawba			3,547.00						62.60
Killian Farm	Catawba Lands Conservancy	Catawba			1,623.00						107.50
McCoy/Lawson Property	Catawba Lands Conservancy	Catawba									3.97
Bethea Property	Catawba Lands Conservancy	Catawba			2,275.00			9.30			41.90
McCoy Property	Catawba Lands Conservancy	Catawba			869.00						42.00
Withers West	Catawba Lands Conservancy	Catawba									9.50
Withers East	Catawba Lands Conservancy	Catawba									23.50
Rankin and Stone Educ. Forest	Catawba Lands Conservancy	Catawba			1,191.00			13.60			27.40
Brooklandwood	Catawba Lands Conservancy	Catawba			11,818.00						201.60
Adair Property	Catawba Lands Conservancy	Catawba			982.00			1.80			36.90
FAS-46365	NC Cooperative Extension	Chowan	1,000.00						1.00		
Soco Creek - Cherokee Co.	Eastern Band of the Cherokee	Little Tennesee	2,000.00								
Ravens Fork River	Eastern Band of the Cherokee	Little Tennesee		300.00							
Oconuluftee River - Bradley Cmpgrd	Eastern Band of the Cherokee	Little Tennesee		300.00							
FAS-544145	NC Cooperative Extension	Neuse							1.00	2.00	
Fearing Hollowell - Kitty Hawk Woods	Division of Coastal Management	Pasquotank						104.90			
Cooke Tract - Kitty Hawk Wooks	Division of Coastal Management	Pasquotank						22.00			
Nasa Jennette - Buxton Woods	Division of Coastal Management	Pasquotank						5.51			
Johnston	USDA NRCS	Roanoke		2,000.00							
Clark Propers	Catawba Lands Conservancy	Yadkin-Pee Dee									57.00
Hinchlitte Property	Catawba Lands Conservancy	Yadkin-Pee Dee			933.00						34.00
Jenkins Property	Catawba Lands Conservancy	Yadkin-Pee Dee			2,284.00						47.00
Bragg North	Catawba Lands Conservancy	Yadkin-Pee Dee			5,805.00			25.90			116.10
Zimmerman Property	Catawba Lands Conservancy	Yadkin-Pee Dee			1,726.00			2.76			71.24
Burton Property	Catawba Lands Conservancy	Yadkin-Pee Dee			2,243.00						53.00
Bragg South	Catawba Lands Conservancy	Yadkin-Pee Dee			1,889.00						69.00
Town Creek Indian Mound	Environmental Impact RC&D	Yadkin-Pee Dee	150.00								
Wildlife Resource	USDA NRCS	Yadkin-Pee Dee				20.00					
Totals			3,150.00	2,600.00	87,560.00	22.00	0.00	252.67	2.00	2.00	1,679.59

R= Restoration E=Enhancement P=Preservation C=Creation

Table D-2. Programs, agencies and groups that received the NCWRP wetland and stream restoration survey.

FY 2000 – 2001 Wetland and Stream Restoration Survey
The following programs, agencies and groups were mailed a copy of the NCWRP survey:

NC Division of Coastal Management	Western N.C. Tomorrow
USDA Natural Resource Conservation Service	Carolina Mountain Land Conservancy
Tar-Pamlico River Foundation	Duke Power
Pender Watch and Conservation	Save Our Rivers
French Broad River Foundation	Farm Services Association
NC League of Municipalities	New River Foundation
US Army Corps of Engineers	Deep River Park Association
Piedmont Land Conservancy	NC Dept. of Agriculture & Consumer Service
Land Stewardship Council	Western N.C. Alliance
NC Homebuilders Association	Upper Neuse River Basin Association
ECO Force	NC Association of County Governments
Carolina Power and Light	Pigeon River Fund
NC Cooperative Extension Service	NC Chapter of the Nature Conservancy
Atlantic Coast Conservation	NC Division of Parks and Recreation
Orange County Environment and Resource	Lumber River Conservancy
Conservation Program	High Country land Conservancy
US Fish and Wildlife Service	NC Fisheries Association
NC Wildlife Resources Commission	Triangle J Council of Governments
NC Division of Soil and Water	National Committee for the New River
NC Division of Forest Resources	Triangle Land Conservancy
US Forest Service	NC Sea Grant
US Environmental Protection Agency	NC State University
NC Farm Bureau Federation	PCS Phosphate
NC Forestry Association	NC Division of Water Quality
Environmental Defense	Ducks Unlimited
Conservation Council of NC	Foothills Conservancy of NC
Southern Environmental Law Center	Audubon Council of NC
Smith Island Land Trust	NC Coastal Land Trust
NC Division of Land Resources	NE New Hanover Conservancy
NC Council of Trout Unlimited	Albemarle Environmental
Environment and Conservation Organization	NC Waters Resources Research Institute
NC Natural Heritage Program	Southern Appalachia Forest Coalition
NC Division of Water Resources	Catawba Land Conservancy
NC Department of Transportation	TVA Clean Water Initiative
Conservation Trust of NC	Cumberland County
NC Division of Marine Fisheries	NC Wildlife Federation
NC Geological Survey	Clean Water Management Trust Fund
Sierra Club	City of Charlotte Stormwater Program
National Marine Fisheries Service	City of Raleigh
Carolina Farm Stewardship	Mecklenburg County Stormwater Program
Sandhills Area Land Trust	Eno River Association
The N.C. Coastal Federation	Haw River Assembly
Neuse River Foundation	City of Greensboro Stormwater Services

August 15, 2001

To: Programs and agencies involved with wetland and stream restoration and preservation efforts in North Carolina

Re: North Carolina Wetlands and Stream Restoration Survey - FY 2000 - 2001

The N.C. Wetlands Restoration Program (NCWRP) is responsible for compiling an inventory of all wetland, stream and riparian area restoration, creation, enhancement and preservation projects completed during the previous fiscal year in North Carolina (July 1, 2000 - June 30, 2001). To meet this objective, the NCWRP is conducting a survey to gather information from federal, state, and local government agencies and non-profit organizations about projects that meet both of the following two criteria:

Projects INITIATED (i.e. structural components, physical earthmoving progress, placement of vegetation / rocks) or COMPLETED during fiscal year 2000-2001 (July 1, 2000 – June 30, 2001). Projects NOT intended to satisfy a compensatory mitigation requirement associated with a Section 404 permit or Section 401 Water Quality Certification.

The NCWRP will conduct this survey each year during the month of August and compile the results in a database. The NCWRP will use the information for various planning efforts. In addition, the information will help the NCWRP to coordinate and connect project efforts across the state and promote a more holistic approach to watershed restoration.

Please return your completed survey by September 21, 2001 to the NCWRP at the address below. Or fax your completed survey to (919) 733-5321. Thank you in advance for taking the time to complete the survey. The results will be published in the NCWRP's Annual Report that will be available on our web site by the end of the year. If you have questions, please contact me at 715-7455 or suzanne.klimek@ncmail.net.

Sincerely,

Suzanne Klimek
Coordinator for Planning

Enclosure:

North Carolina Wetland, Stream and Riparian Restoration, Creation, Enhancement and Preservation
Survey for Fiscal Year 2000-2001

PROGRAM INFORMATION: If your organization has more than one program conducting wetland or stream restoration, please fill out separate surveys for each program or make note of which projects are associated with different programs.

Program Title / Agency:_____
Program Representative and Contact Information:
Name
Address_____
Phone: _____Fax:_____
E-Mail:

PROJECT INFORMATION: Please provide as much of the requested information as possible for each wetland/stream project.

Only include NON-COMPENSATORY MITIGATION projects initiated or completed between July 1, 2000 – June 30, 2001.

- *List information for each project individually. You will need to make copies of the survey if you initiated or completed more than one project during the last fiscal year.*
- *Provide details on projects completed before fiscal year 2000 - 2001 by noting the appropriate fiscal year for each project on your survey.*

1. *Project Name / Number:*_____
   (assigned by your program or organization)

Purpose of the Project: general information about your project's purpose (i.e. to improve water quality, to reopen closed shellfish waters, improve fisheries and wildlife habitat, etc.)._____
_____

Project Completion Date or Target Date of Completion: (Month/Year) Include the percentage of your project that was completed by June 30, 2001, if you provided a targeted project completion date.

Completion or Targeted Completion Date:
Percentage of Project Completed as of June 30, 2000:

Project Funding Source(s) / Partners Involved: List any programs or granting entities that are funding your project and any other partners involved with your project.

Location Reference(s): The River basin, subbasin, county, 14-digit hydrologic unit – or whatever geographical unit your program uses for referencing projects.

River Basin:

____	Broad	____	Little Tennessee
____	Savannah	____	Cape Fear
____	Lumber	____	Tar-Pamlico
____	Catawba	____	Neuse
____	Watauga	____	Chowan
____	New	____	White Oak
____	Hiwassee	____	Roanoke
____	Pasquotank	____	French Broad
____	Yadkin-Pee Dee		

Sub-basin (if known):

Sub-basin Number: _____

_____

USGS 14-Digit Hydrologic Unit: _____

County:_____Nearest Town: _____

Type of legal instrument used to protect restored/protected project properties: If you are using conservation easements, please indicate the term length (i.e. 10, 15, 30 years or perpetuity).

____ Conservation Easement (number of years _____ or permanent).

____ Purchase Fee-Simple_____

_____

____ Contract (number of years _____)

2. Project Activities: Review the definitions below, and then complete the table by placing a check next to the activities that apply to this project. Specify the number of acres / feet where appropriate.

Wetland Restoration: Re-establish wetland hydrology and vegetation in an area where it previously existed.

Wetland Enhancement: Increase one or more of the functions of an existing wetland by manipulating vegetation or hydrology.

Wetland Creation: Establishing wetland hydrology, vegetation and soils in an area where wetlands did not exist in the recent past.

Stream Restoration: The process of converting an unstable, altered or degraded stream corridor, including adjacent riparian zone and floodprone areas to its natural or referenced, stable conditions considering recent and future watershed conditions. This process also includes restoring the geomorphic dimension, pattern, and profile as well as biological and chemical integrity, including transport of water and sediment produced by the stream's watershed in order to achieve dynamic equilibrium.

Stream Enhancement: Protecting and/or enhancing stream stability and functions by establishing vegetated buffers; increasing buffer width, and/or stabilizing streambanks using bioengineering techniques.

Wetlands and Stream Segment Preservation: Protecting wetlands and stream segments by purchasing, donating or conveying a conservation easement to an appropriate government or non-profit agency to manage.

Nonwetland Riparian Buffer Restoration: Establishing a vegetated buffer (minimum 25 ft. width) and maximizing sheet flow through buffer by receiving concentrated flow areas.

Nonwetland Riparian Buffer Enhancement: Increasing width of existing vegetated buffer and maximizing sheet flow through buffer by reducing concentrated flow amounts.

Nonwetland Riparian Buffer Preservation: Preserving existing forested buffers (minimum 25 ft. width).

Wetland

Please Check	Specify Acres	
Restoration	_____	Acres
Enhancement	_____	Acres
Creation	_____	Acres
Preservation	_____	Acres

Stream

Please Check	Specify Feet	
Restoration	_____	Feet
Enhancement	_____	Feet
Creation	_____	Feet
Preservation	_____	Feet

Non-Wetland Riparian Buffers

Please Check	Specify Square Feet or Acres			
Restoration	_____	Sq. Feet	_____	Acres
Enhancement	_____	Sq. Feet	_____	Acres
Creation	_____	Sq. Feet	_____	Acres
Preservation	_____	Sq. Feet	_____	Acres

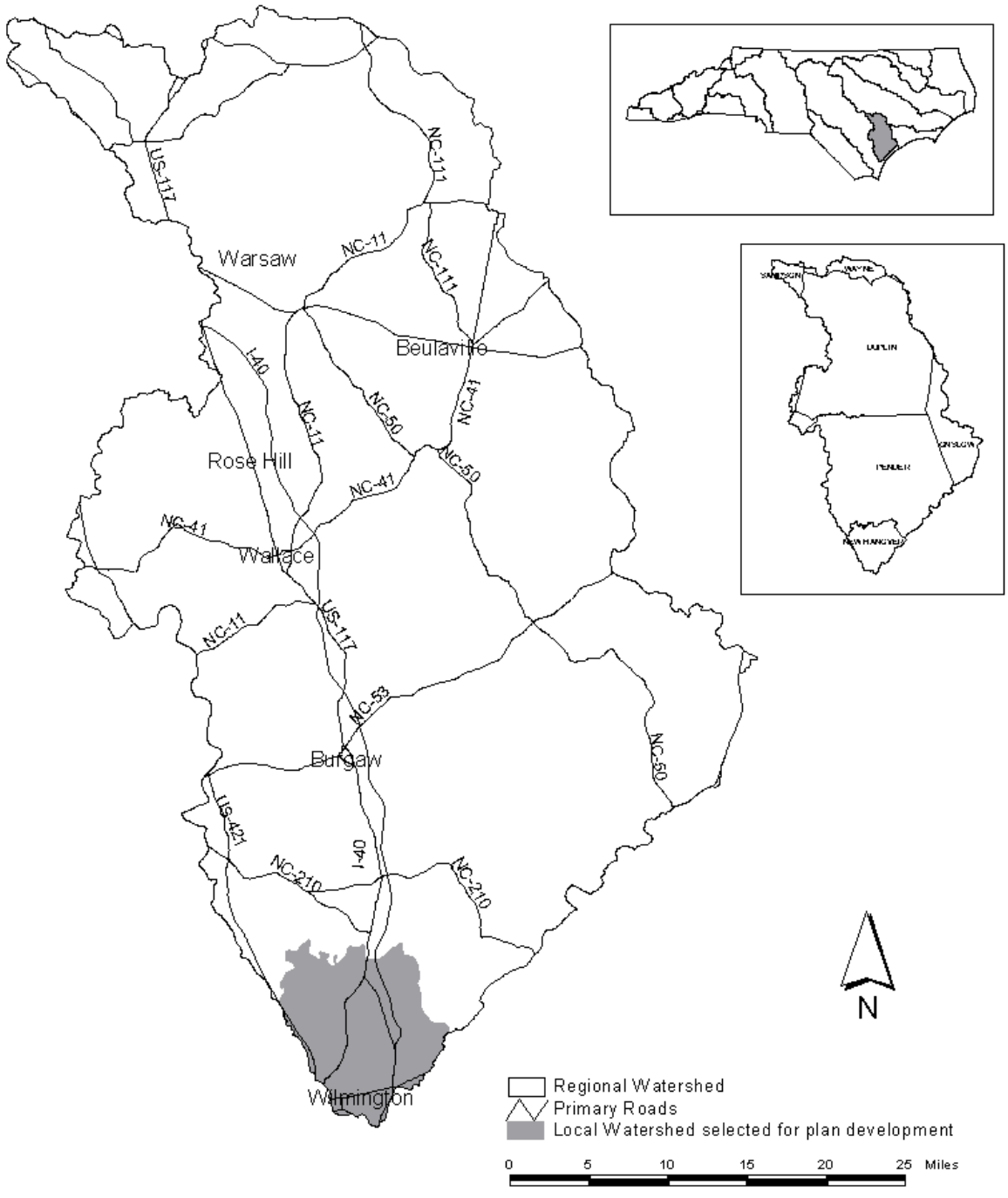
Send completed surveys, by Sept. 10, 2001, to:
NC Wetlands Restoration Program
1619 Mail Service Center
Raleigh, N.C. 27699-1619

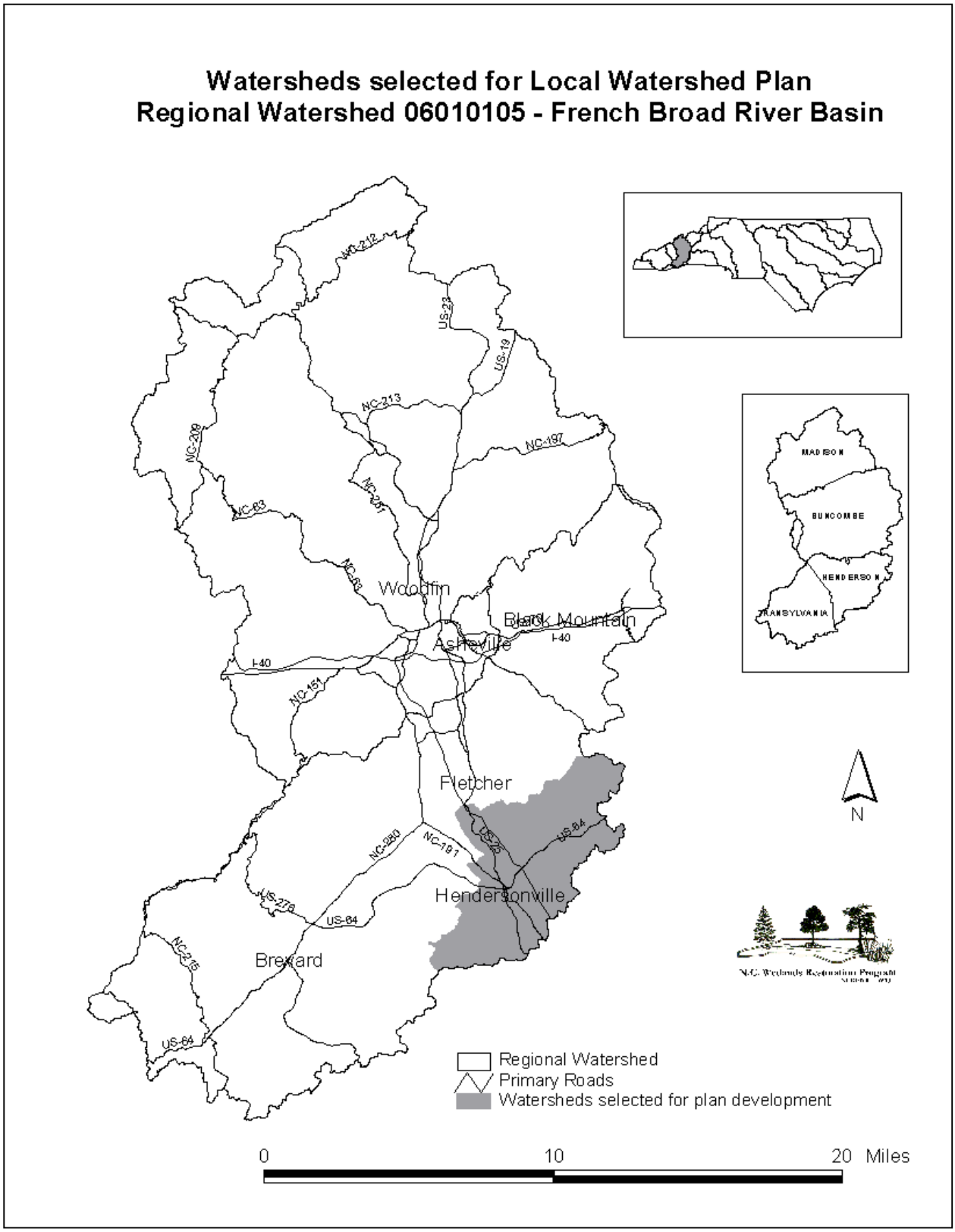
Or…..Fax: (919) 733-5321.

Questions? Call (919) 715-7455

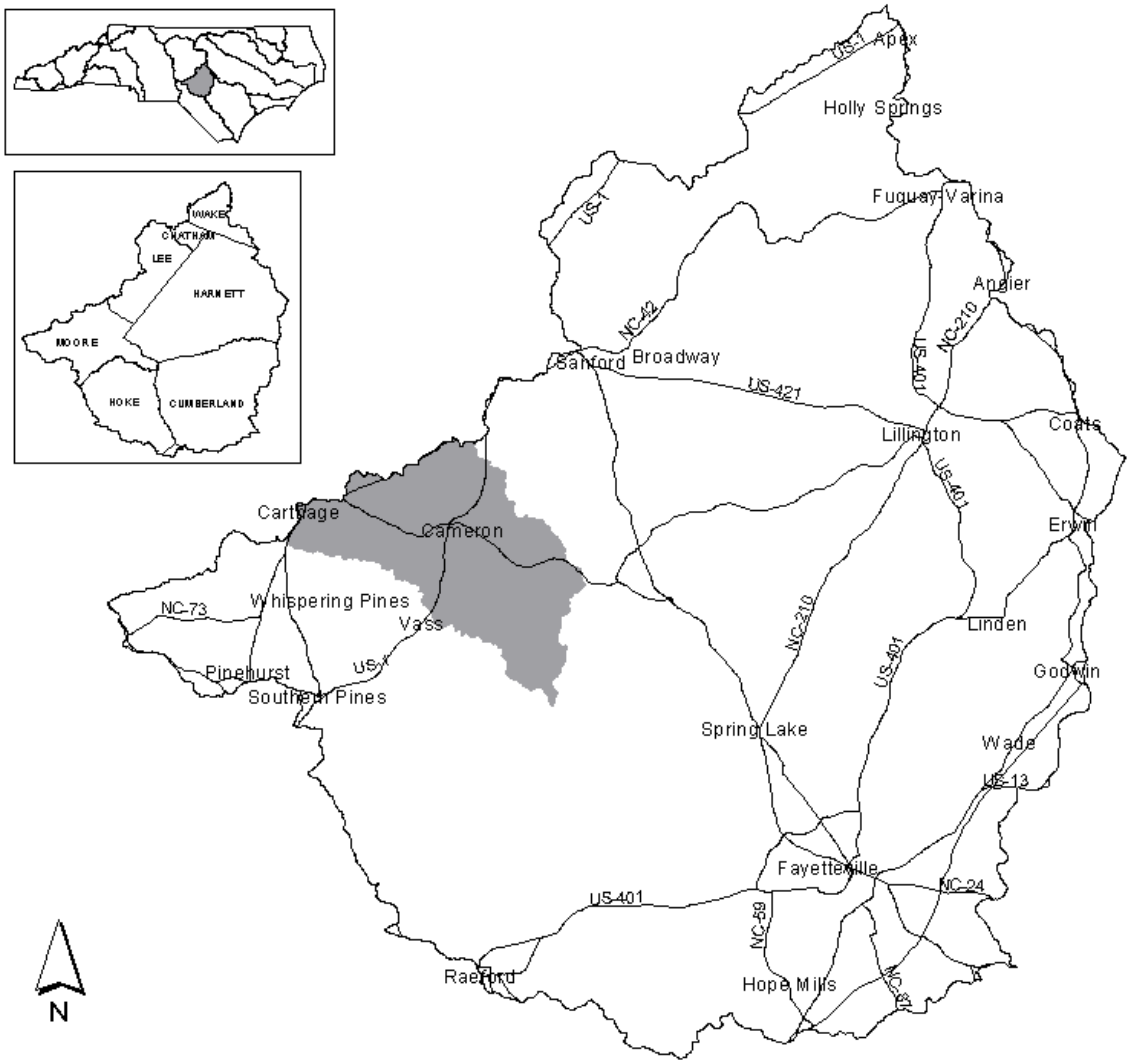
Appendix E
Area Maps of Local Watershed Planning Initiatives

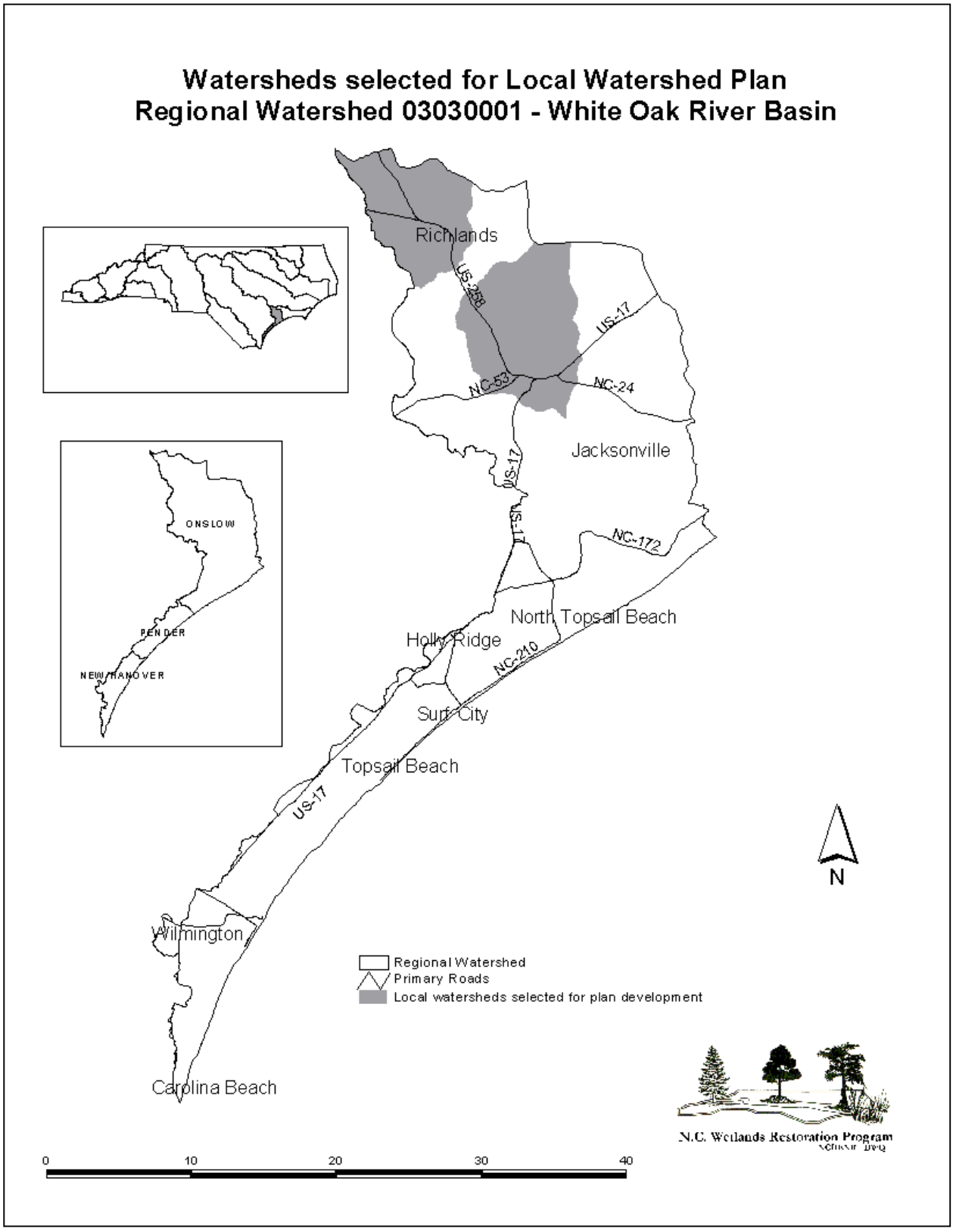
Watersheds Selected for Local Watershed Plan
Regional Watershed 03030007 - Lower Cape Fear River Basin



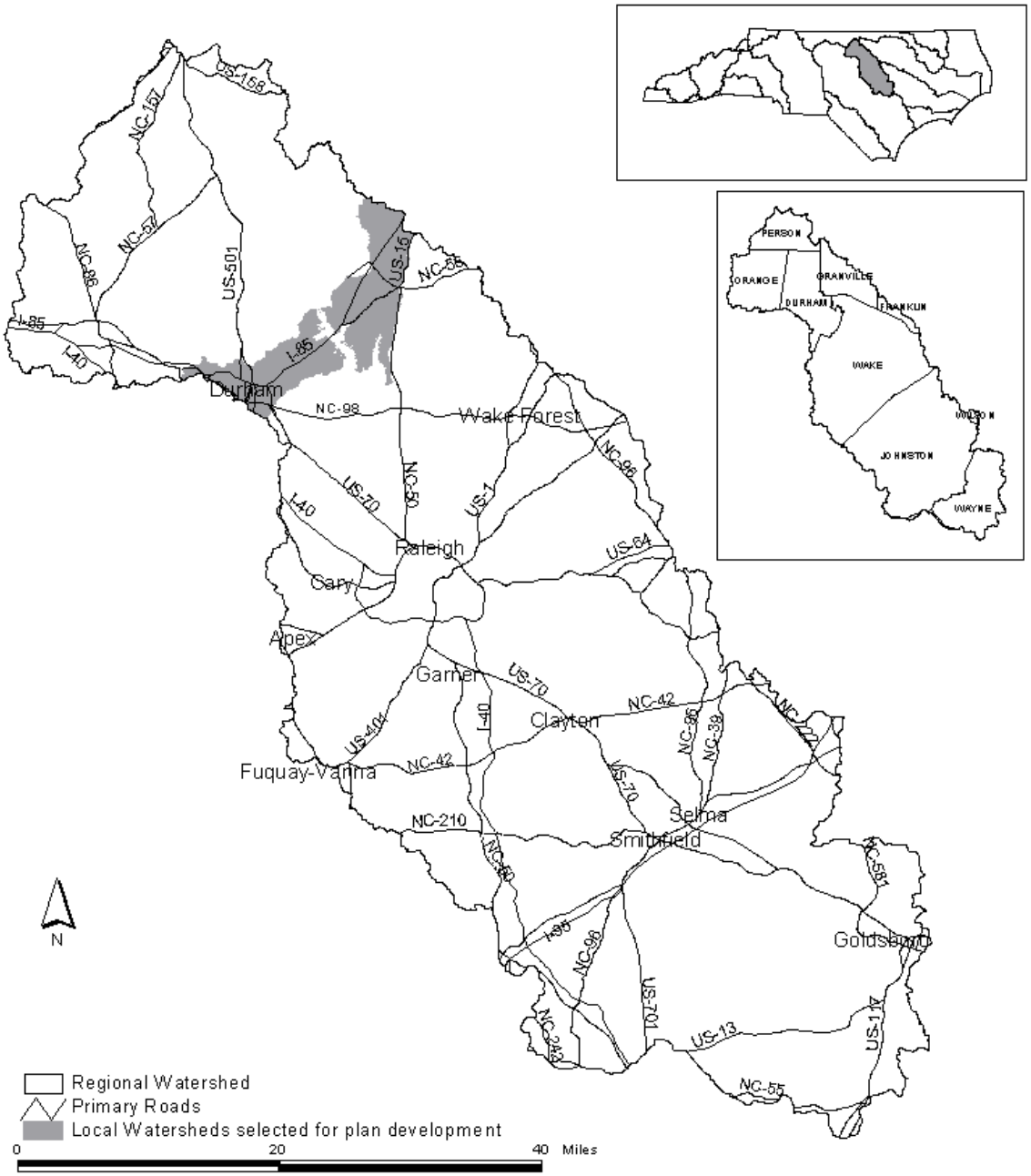

Watersheds selected for Local Watershed Plan
Regional Watershed 06010105 - French Broad River Basin
MADISON
BUNCOMBE
HENDERSON
TRANSYLVANIA
Woodfin
Black Mountain
Asheville
Fletcher
Hendersonville
Brevard
I-40
US-23
US-19
US-64
US-25
US-276
NC-213
NC-197
NC-209
NC-63
NC-251
NC-81
NC-151
NC-280
NC-191
NC-215
N
Regional Watershed
Primary Roads
Watersheds selected for plan development
0
10
20 Miles

Watersheds selected for Local Watershed Plan
Regional Watershed 03030004- Middle Cape Fear River Basin

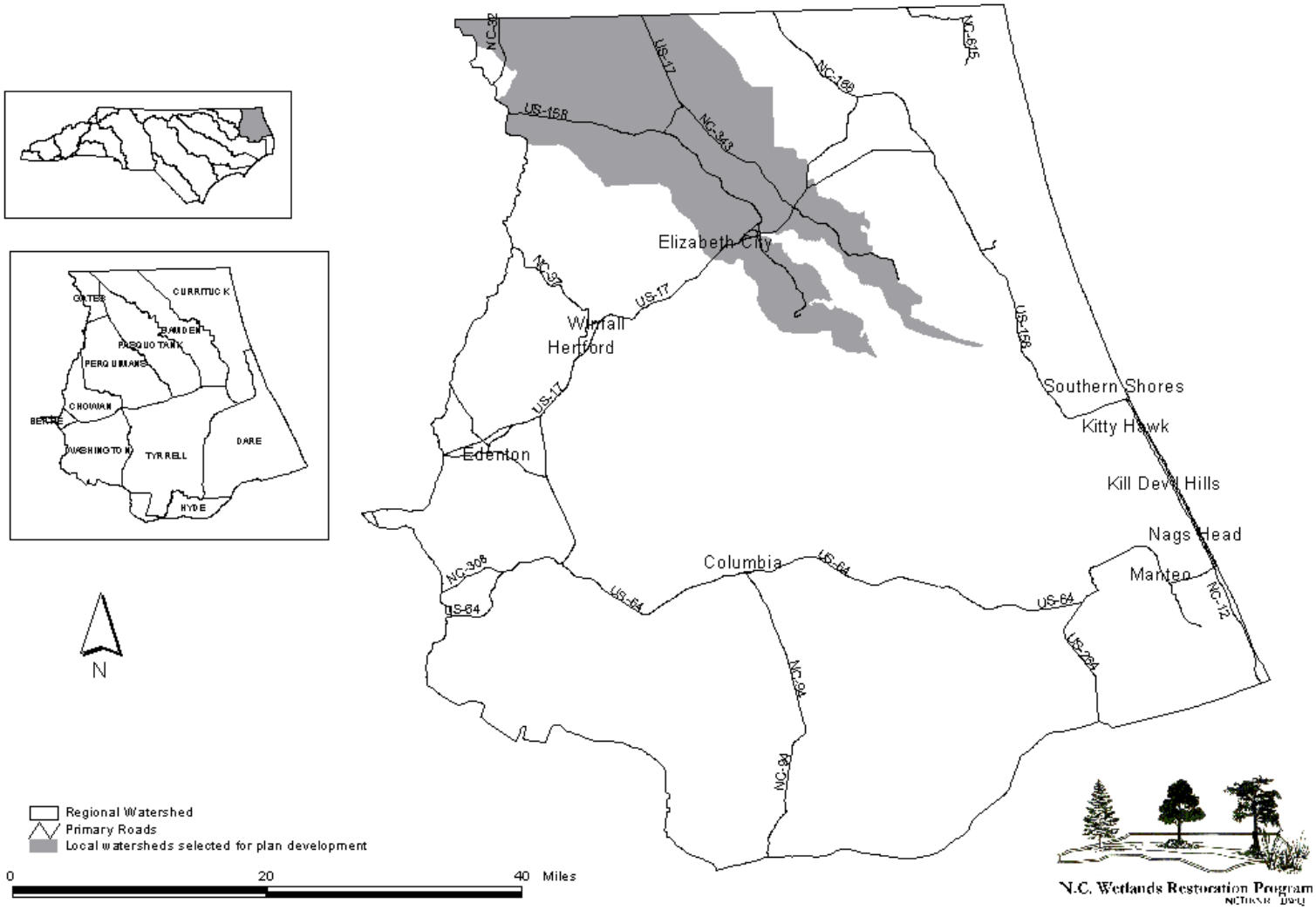



Watersheds selected for Local Watershed Plan
Regional Watershed 03030001 - White Oak River Basin
Richlands
US-258
US-17
NC-53
NC-24
Jacksonville
US-17
US-17
NC-172
North Topsail Beach
Holly Ridge
NC-210
Surf City
Topsail Beach
US-17
Wilmington
Carolina Beach
ONSLOW
PENDER
NEW HANOVER
N
Regional Watershed
Primary Roads
Local watersheds selected for plan development
N.C. Wetlands Restoration Program
0
10
20
30
40

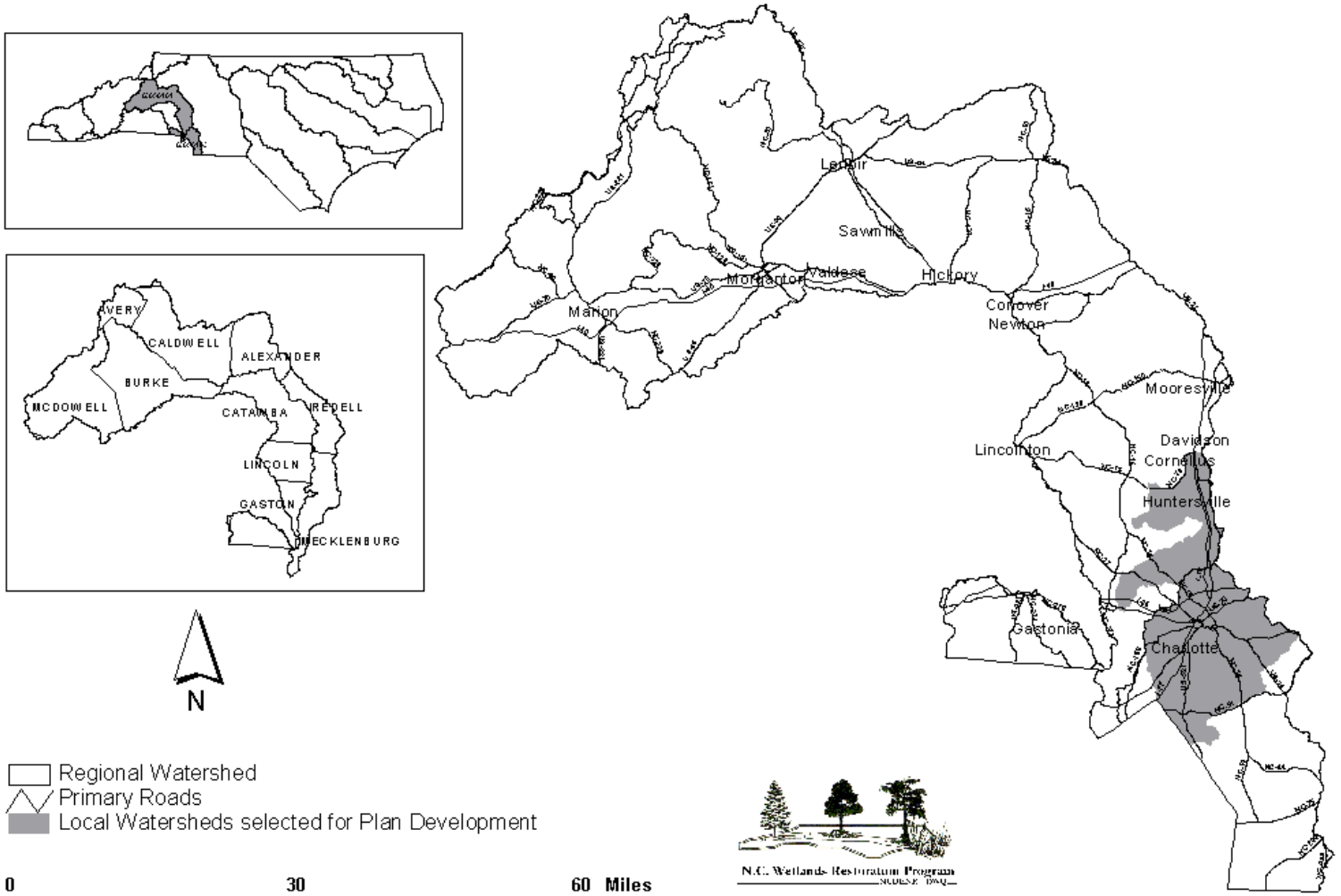
Watersheds selected for Local Watershed Plan
Regional Watershed 03030201 - Neuse River Basin



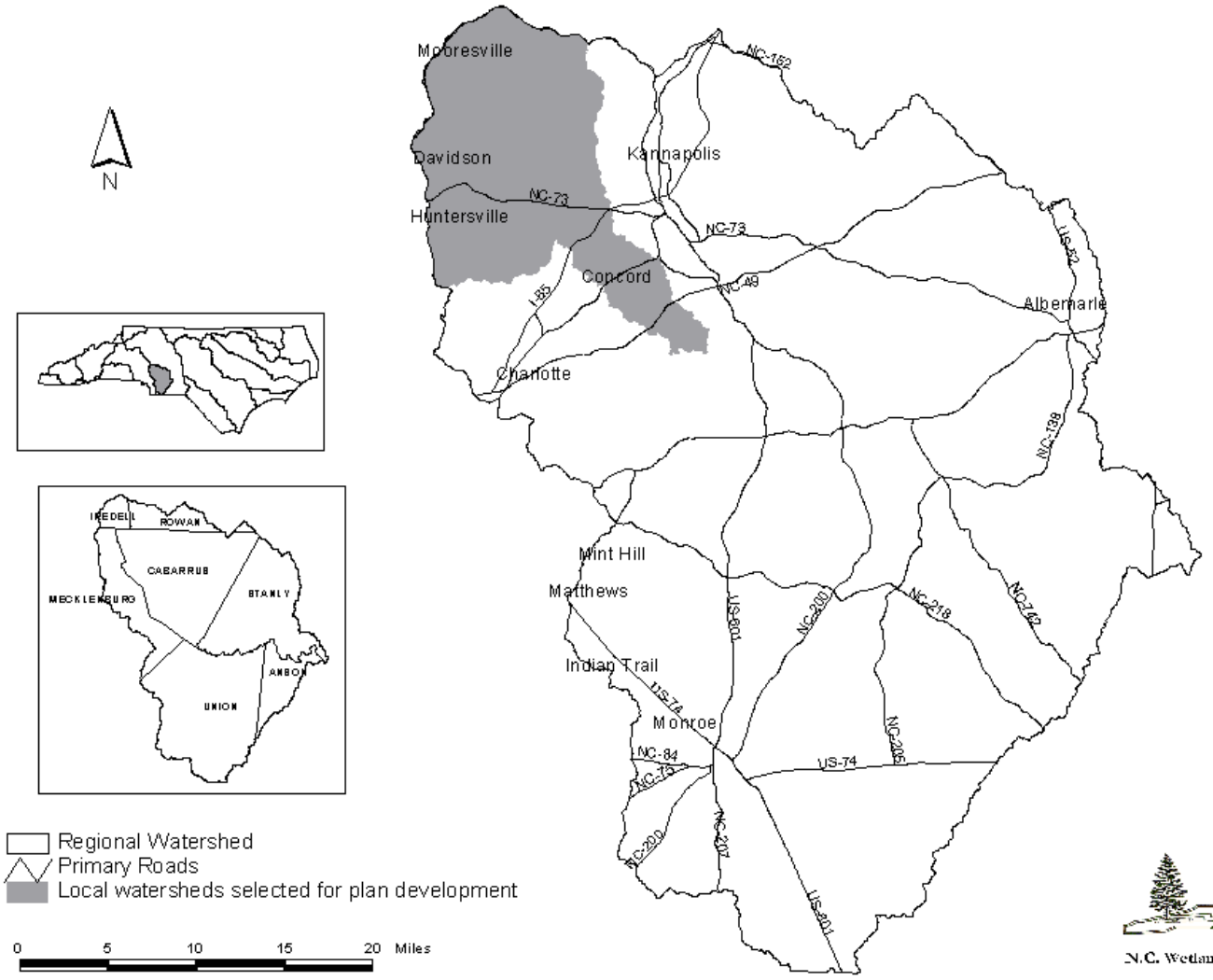
Watersheds selected for Local Watershed Plan
Regional Watershed 03010205 - Pasquotank River Basin



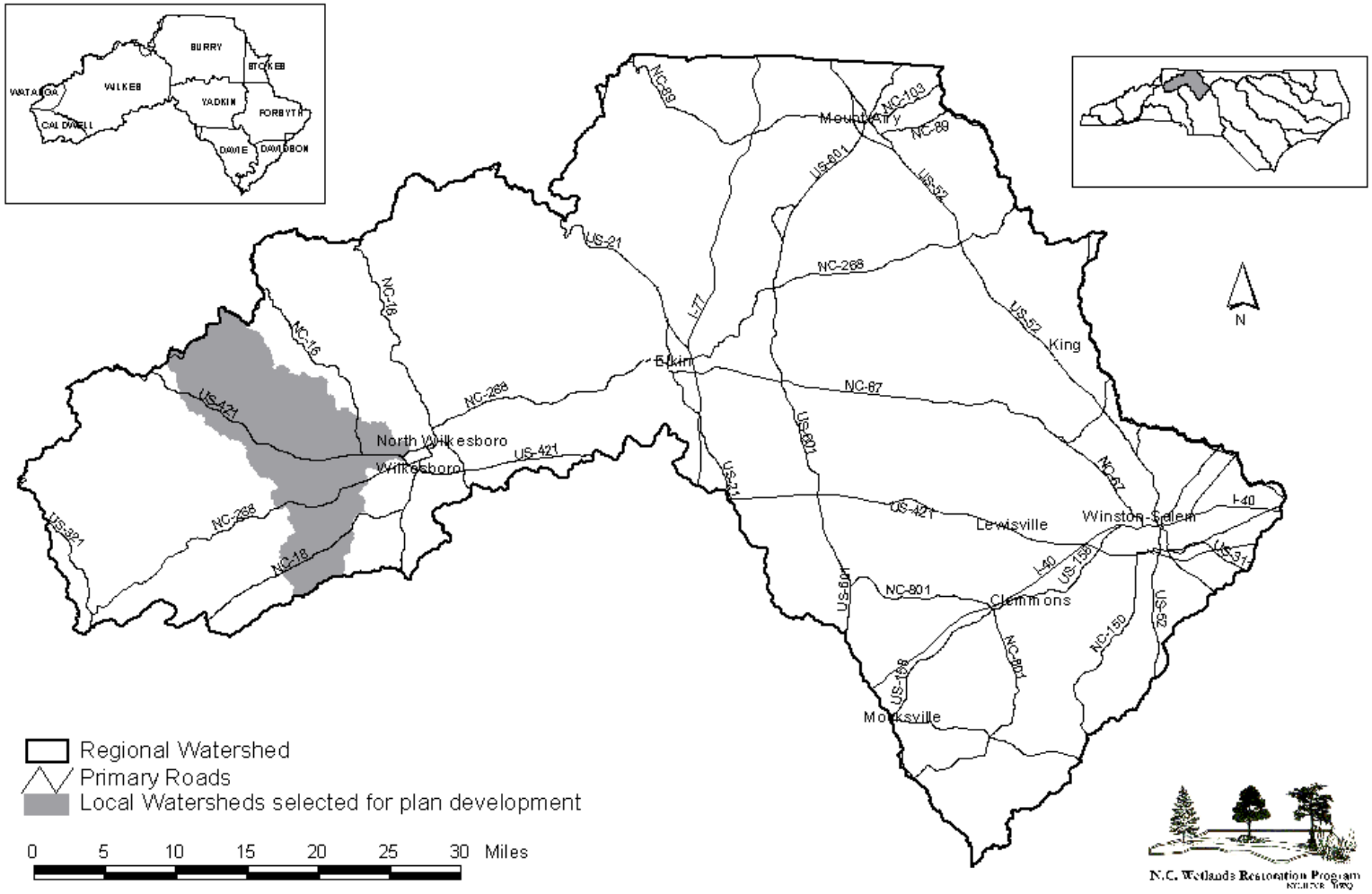
Watersheds selected for Local Watershed Plan
Regional Watersheds 03050101 and 03050103 - Catawba River Basin



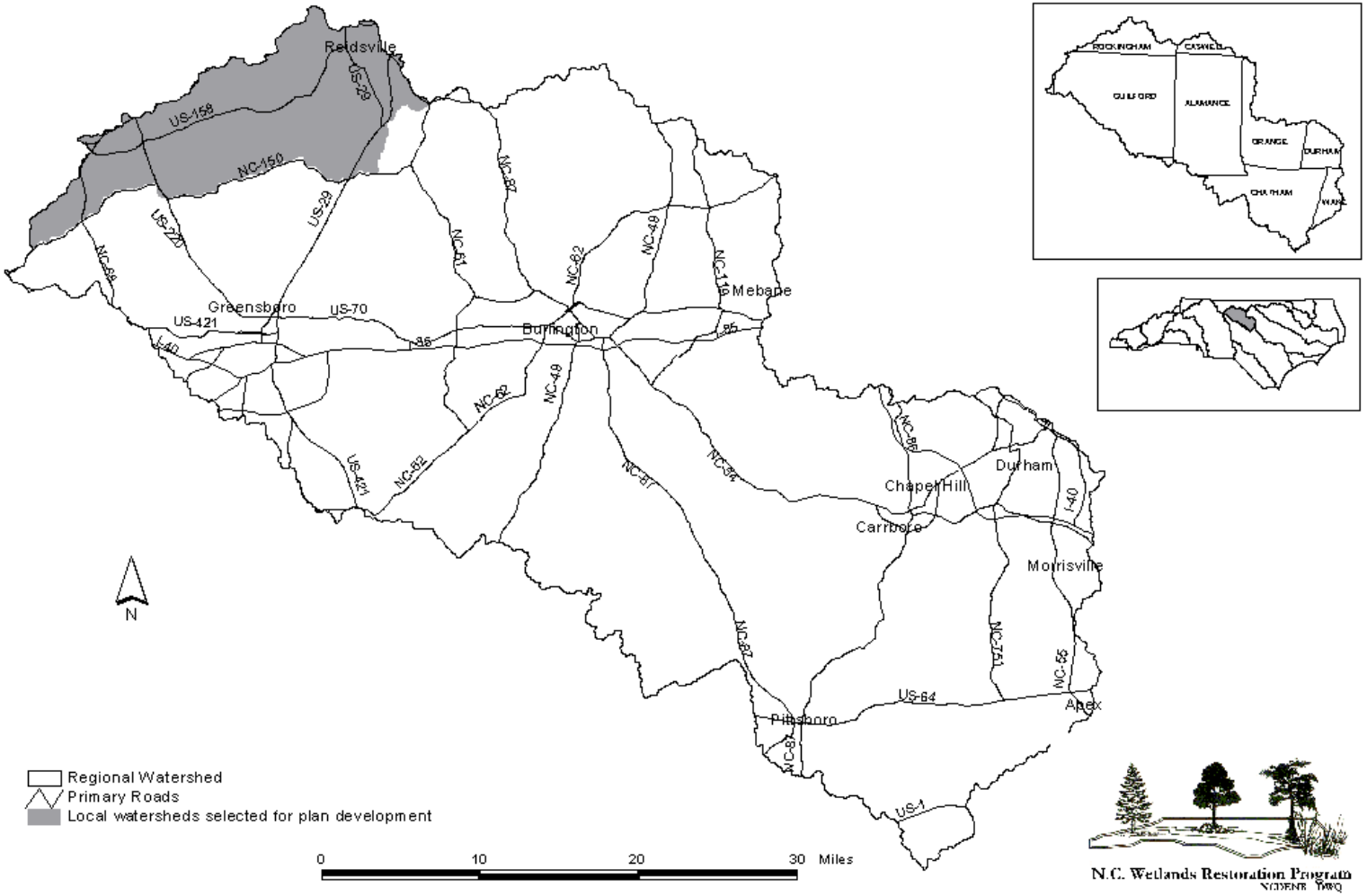
Watersheds selected for Local Watershed Plan
Regional Watershed 03040105- Lower Yadkin Pee-Dee River Basin



Watersheds selected for Local Watershed Plan
Regional Watershed 03040101 - Upper Yadkin River Basin



Watersheds selected for Local Watershed Plan
Regional Watershed 03030002 - Upper Cape Fear River Basin



Appendix F
Wetland Trust Fund Tables

Table F-1. Payments to the North Carolina Department of Environment and Natural Resources Wetlands Trust Fund Account 2981 for compensatory mitigation (FY2000-2001)

						Mitigation Requirements				
Payment Date	**Applicant's Name**	**401 Certification Number**		**404 Permit Number**	**TIP Number**	**Payment Amount**	**404**	**401**	**Units**	**Mitigation Type**	**Description**
7/17/2000	W. R. Bonsal Company	98	517			$ 36,250.00	290	290	Feet	Stream	
9/6/2000	Regent Morrisville	0	169			$ 24,375.00		195	Feet	Stream	Cool
9/18/2000	NCDOT	99	248	199930586	U2512BA	$ 117,625.00	941	941	Feet	Stream	Warm
9/18/2000	NCDOT	99	337	199930776	R-2248AC,AD	$ 1,508,000.00	12,064	12,064	Feet	Stream	Warm
9/18/2000	NCDOT	99	929	199705476	R-2001B	$ 310,375.00	2,483	2,483		Stream	Warm
9/18/2000	NCDOT	99	942	199920833	R-2239C	$ 1,595,000.00	12,760	12,760		Stream	
9/18/2000	NCDOT	99	1201	199601876	U-2804B	$ 115,000.00	920	920	Feet	Stream	Warm
9/27/2000	NCDOT	0	105	199602650	R2204A	$ 22,250.00	178	178	Feet	Stream	Warm
9/27/2000	NCDOT	0	505			$ 96,250.00	770	770		Stream	Warm
9/27/2000	NCDOT	99	995	199601926	R-2240	$ 881,000.00	7,048	7,048		Stream	Cool
9/27/2000	NCDOT	99	1469			$ 131,750.00	1,054	1,054	Feet	Stream	Warm
10/24/2000	Lowe's	99	1207	200020203		$ 62,375.00	499	499	Feet	Stream	Cool
10/26/2000	NCDOT	0	552	199402773	R942CA	$ 462,500.00	3,700	3,700	Feet	Stream	Warm
10/26/2000	NCDOT - Newton/Conover Eastern Loop	0	614	199702363	U-2404B	$ 458,000.00	3,664	3,664	Feet	Stream	Cold
10/26/2000	Klass Properties	0	1105	200021860		$ 37,500.00	300	300	Feet	Stream	Warm
10/26/2000	NCDOT			199931229	U2530B	$ 23,750.00	190		Feet	Stream	Warm
10/31/2000	NCDOT	0	72			$ 1,064,500.00	8,516	8,516	Feet	Stream	Warm
11/6/2000	Hanes Commons Shopping Ctr.	99	1172			$ 108,375.00	867	867	Feet	Stream	Warm

Table F-1. Payments to the North Carolina Department of Environment and Natural Resources Wetlands Trust Fund Account 2981 for compensatory mitigation (FY2000-2001)

							Mitigation Requirements				
Payment Date	**Applicant's Name**	**401 Certification Number**		**404 Permit Number**	**TIP Number**	**Payment Amount**	**404**	**401**	**Units**	**Mitigation Type**	**Description**
11/14/2000	Bluegreen Corporation	99	1233	199921172, 200020339, 200021898		$ 139,500.00	1,116	1,116	Feet	Stream	Warm
11/27/2000	Breckenridge Subdivision	0	1218			$ 58,375.00		467	Feet	Stream	Cool
12/5/2000	The Raleigh School	0	1093			$ 14,000.00		112	Feet	Stream	Cool
12/14/2000	VADOT	0	166	199417015	VDOTM0329	$ 363,250.00	2,906	2,906	Feet	Stream	Warm
12/28/2000	NCDOT	0	1140			$ 103,375.00		827	Feet	Stream	Warm
1/22/2001	NCDOT	99	929	199705476	R-2001B	$ 310,375.00	2,483	2,483		Stream	Warm
1/22/2001	NCDOT	0	943	200021484		$ 50,750.00	406	406	Feet	Stream	
1/24/2001	Southwest High School	0	582	200030806		$ 110,625.00		885		Stream	
1/25/2001	Clement Properties	0	1297			$ 37,500.00		300	Feet	Stream	
2/12/2001	Piedmont Center Associates	99	1096			$ 28,125.00		225	Feet	Stream	
2/28/2001	Pope AFB Red Ramp	0	447	200000991		$ 12,500.00	100	100	Feet	Stream	Warm
3/1/2001	Trammel Crow Company	99	801			$ 57,000.00		456	Feet	Stream	
3/9/2001	Citizens for Economic Development	0	254			$ 25,125.00		201	Feet	Stream	Warm
3/9/2001	City of Greensboro	0	695	199920006		$ 61,875.00	495	495	Feet	Stream	Warm

Table F-1. Payments to the North Carolina Department of Environment and Natural Resources Wetlands Trust Fund Account 2981 for compensatory mitigation (FY2000-2001)

						Mitigation Requirements				
Payment Date	**Applicant's Name**	**401 Certification Number**		**404 Permit Number**	**TIP Number**	**Payment Amount**	**404**	**401**	**Units**	**Mitigation Type**	**Description**
3/13/01	Bill Price Holdings	99	1003			$ 61,875.00		495	Feet	Stream	Warm
3/27/2001	NC Dept of Transportation	0	805	199602420, 200021006	R-2604	$ 455,250.00	3,642	3,642	Feet	Stream	Cold
3/27/2001	NC Dept of Transportation	0	1128	199921144	U-2582B	$ 74,000.00	592	592	Feet	Stream	
4/4/2001	Southern Packing	0	278			$ 32,500.00		260	Feet	Stream	
4/19/2001	NCDOT	0	1040			$ 156,125.00		1,249	Feet	Stream	Warm
4/19/2001	NC Dept of Transportation	0	1236	200120090	R-2001C	$ 51,250.00	410	410	Feet	Stream	Cold
4/19/2001	NC Dept of Transportation	0	1543	200120287 - 200120288	B-2974	$ 26,500.00	212	212	Feet	Stream	Warm
5/16/2001	Landcraft Homes	99	793			$ 36,250.00		290	Feet	Stream	
5/21/2001	City of Greensboro	0	694	200021059		$ 171,000.00	1,368	1,368	Feet	Stream	Warm
5/21/2001	Crosland Group	0	1549			$ 9,625.00	77	77	Feet	Stream	Warm
6/6/2001	NC Dept of Transportation	0	577	200030933 - 200030942	U-2512A	$ 92,750.00	742	371	Feet	Stream	Warm
6/6/2001	NC Dept of Transportation	0	1045	199603836	U-92A/B	$ 109,375.00	875	155	Feet	Stream	Warm
6/6/2001	NC Dept of Transportation	0	1520	200110187, 200110384	R-218B	$ 149,750.00	1,198	1,198	Feet	Stream	Warm
6/29/2001	Federal Bureau of Prisons	1	13			$ 16,875.00	135	135	Feet	Stream	

Table F-1. Payments to the North Carolina Department of Environment and Natural Resources Wetlands Trust Fund Account 2981 for compensatory mitigation (FY2000-2001)

						Mitigation Requirements				
Payment Date	**Applicant's Name**	**401 Certification Number**		**404 Permit Number**	**TIP Number**	**Payment Amount**	**404**	**401**	**Units**	**Mitigation Type**	**Description**
6/29/2001	Piedmont Center Associates	1	549			$ 36,875.00		295	Feet	Stream	
7/17/2000	W. R. Bonsal Company	98	517	199800680		$ 36,000.00	2.88	2.88	Acres	Wetland	Non Riparian
10/26/2000	NCDOT	97	478	199501132	R0218A	$ 87,000.00	7.04	7.04	Acres	Wetland	Non Riparian
1/24/2001	Carolina Power and Light	0	1279	200100100		$ 12,000.00	0.98	0.98	Acres	Wetland	Non Riparian
4/19/2001	NCDOT	0	1040			$ 6,000.00		0.43	Acres	Wetland	Non Riparian
6/13/2001	Dare County Justice Facility	0	972	200011238		$ 66,000.00	5.46	5.26	Acres	Wetland	Non Riparian
9/27/2000	NCDOT	0	505	199601404	R2112BB	$ 132,000.00	5.43	5.43		Wetland	Riparian
9/27/2000	NCDOT	99	1469	200030264BH	U3307B	$ 144,000.00	5.94	5.94	Acres	Wetland	Riparian
10/31/2000	NCDOT	0	72	199403552	R2633C	$ 168,000.00	7.00	7.00	Acres	Wetland	Riparian
10/31/2000	NCDOT	99	491	199920857	R2302	$ 30,000.00	1.25	1.25	Acres	Wetland	Riparian
11/6/2000	Hanes Commons Shopping Ctr.	99	1172			$ 18,000.00	0.64	0.32	Acres	Wetland	Riparian
12/2/2000	NCDOT	99	661	199930003	R-2214B	$ 6,000.00	0.14	0.14	Acres	Wetland	Riparian
12/6/2000	Fairview Baptist Church	0	1155	200021861		$ 12,000.00	0.47	0.47	Acres	Wetland	Riparian
12/7/2000	Schumaker Engineering	0	162			$ 72,000.00		2.97	Acres	Wetland	Riparian
12/7/2000	Fairview Baptist Church	0	1155			$ 24,000.00		1.00		Wetland	Riparian

Table F-1. Payments to the North Carolina Department of Environment and Natural Resources Wetlands Trust Fund Account 2981 for compensatory mitigation (FY2000-2001)

						Mitigation Requirements				
Payment Date	**Applicant's Name**	**401 Certification Number**	**404 Permit Number**	**TIP Number**	**Payment Amount**	**404**	**401**	**Units**	**Mitigation Type**	**Description**
2/20/2001	Town of Fairmont	99 872	199801874		$ 42,000.00	1.60	1.60	Acres	Wetland	Riparian
2/28/2001	Pope Air Force Base	0 447			$ 678,000.00	28.20	28.20	Acres	Wetland	Riparian
3/1/2001	Richmond Co. Water Expansion	1 258	200001398		$ 18,000.00	0.52	0.52	Acres	Wetland	Riparian
4/19/2001	NC Dept of Transportation	0 1040		I-306DB	$ 30,000.00		1.16	Acres	Wetland	Riparian
5/21/2001	Crosland Group	0 1549	199921332		$ 6,000.00	0.10	0.10	Acres	Wetland	Riparian
6/5/2001	Sandler at Wakefield		200120770		$ 18,000.00	0.75			Wetland	Riparian
6/11/2001	First Capital Investments	0 719	200020715, 200021152		$ 6,000.00	0.16	0.25	Acres	Wetland	Riparian
6/29/2001	Federal Bureau of Prisons	1 13	200120354		$ 12,000.00	0.28	0.28	Acres	Wetland	Riparian
6/6/2001	Trailwood Partners				$ 1,393.00					Nitrogen offset
6/14/2001	Mack Gay Associates				$ 2,410.00					Nitrogen offset
6/22/01	Duke Construction, LP				$ 4,508.00					Nitrogen offset
Total					$ 11,521,683.00					

Table F-2. Payments to the Riparian Buffer Restoration Fund (Account 2982) for (FY2000-2001)

Payment Date	Applicant's Name	Certification Number		Payment Amount	Mitigation Requirements	Units
8/10/2000	Westminster Homes	0	867	$ 101.00	105	Sq. Feet
9/6/2000	Regent Morrisville	0	169	$ 34,364.00	11,392	Sq. Feet
10/16/2000	Donald and Kay Knowles	0	889	$ 1,584.00	1,100	Sq. Feet
11/27/2000	Robert & Joann Cuskley	0	1250	$ 104.00	72	Sq. Feet
12/11/2000	Oaks Construction Company	0	1475	$ 302.00	188	Sq. Feet
12/11/2000	Oaks Construction Company	0	1509	$ 270.00	210	Sq. Feet
12/14/2000	Steeple Square Associates	0	1152	$ 4,565.00	4,755	Sq. Feet
1/18/2001	City of Washington	0	1495	$ 4,896.00	5,100	Sq. Feet
1/5/2001	Highwoods Realty	0	1140	$ 218,978.00	2.15	Acres
2/12/2001	Gilbert and Susan Roys	0	1317	$ 505.00	526	Sq. Feet
2/12/2001	Beach Road Lot #'s 113&14	0	1582	$ 3,117.00	3,247	Sq. Feet
4/19/2001	DOT	0	1040	$ 996,095.00	23.82	Acres
5/16/2001	George Jordan III	0	1062	$ 31,504.00	31,504	Sq. Feet
6/1/2001	DOT	99	413	$ 343,406.00	8	Acres
6/6/2001	Ed and Joyce Calvitti	1	339	$ 120.00	125	Sq. Feet
Total				**$ 1,641,641.00**	36.60	Acres

Table F-3. Summary of expenditures from Wetlands Trust Fund (FY2000-2001)

Contractor	Expenditure type	Amount
Account 2980 payments to vendors FY00-01		
N.C. State University	Construction management	$ 209,932.40
Division of Coastal Management	Planning	$ 15,965.00
University of Southern Mississippi	Planning	$ 5,000.00
Arcadis Geraghty and Miller	Project design & construction management	$ 32,598.93
Blue Land Water Infrastructure	Project design & construction management	$ 284,412.96
Buck Engineering	Project design & construction management	$ 137,161.40
Earth Tech, Inc.	Project design & construction management	$ 64,392.00
Ecoscience Corp.	Project design & construction management	$ 27,396.08
HDR Engineering	Project design & construction management	$ 208,448.44
KCI Associates of N.C.	Project design & construction management	$ 88,899.24
Kimley-Horn and Associates	Project design & construction management	$ 179,117.13
Natural Areas Ecosystem Management	Project design & construction management	$ 7,938.40
Post Buckley Schuh and Jernigan	Project design & construction management	$ 70,251.11
Soil and Environmental Consulting	Project design & construction management	$ 60,524.09
Allen H. Wellons	Site acquisition	$ 800.00
Johnston Co. Registrar of Deeds	Site acquisition	$ 18.00
DOT	Site restoration	$ 6,908.29
Shamrock Environmental Corp.	Site restoration	$ 186,448.30
	Total expenditures	$1,586,211.77
Account 2981 payments to vendors FY00-01		
Carolina Power and Light Co.	Administration	$ 375.81
Centennial Conferences	Administration	$ 250.00
COECO Office Systems	Administration	$ 532.62
Duncan Parnell, Inc.	Administration	$ 28.94
First Union	Administration	$ 1,228.46
Glenwood Asset Management	Administration	$ 9,806.16
Information Technology Systems	Administration	$ 7,941.84
J.W. Photo Labs, Inc.	Administration	$ 5.83
MacPapers, Inc.	Administration	$ 260.76
Marjs Perfect Parties	Administration	$ 6.10
N.C. Department of Administration	Administration	$ 7,566.18
N.C. Department of Correction	Administration	$ 2,435.14
N.C. State University	Administration	$ 1,744.00
News and Observer	Administration	$ 421.12
News and Record	Administration	$ 96.04
State of N.C. Comprehensive	Administration	$ 3,383.64
State of N.C. Salaries	Administration	$ 125,146.36
State of N.C. Salaries (DOA)	Administration	$ 45,509.33
The News and Observer	Administration	$ 421.12
Travel	Administration	$ 5,256.55
U.S. Office Products	Administration	$ 395.37
Spatco Environmental, Inc.	Site restoration	$ 600,105.14
N.C. State University	Construction management	$ 59,636.06

Table F-3. Summary of expenditures from Wetlands Trust Fund (FY2000-2001)

Contractor	Expenditure type	Amount
Intra governmental Transfer	Licenses and permits	$ 1,744.19
KCI Associates of N.C.	Planning	$ 93,185.49
N.C. State University	Planning	$ 17,542.89
Natural Resources Conservation	Planning	$ 39,011.46
Buncombe Co. Registrar of Deeds	Site acquisition	$ 14.00
City of Raleigh	Site acquisition	$ 43.43
George M. West	Site acquisition	$ 2450.00
Guilford Co. Registrar of Deeds	Site acquisition	$ 4.00
McInnis Real Property Consulting	Site acquisition	$ 1,250.00
Onslow Co. Registrar of Deeds	Site acquisition	$ 16.00
Southwind Surveying	Site acquisition	$ 2,500.00
Wake County County Manager	Site acquisition	$ 2.00
Williams Appraisers, Inc.	Site acquisition	$ 2,300.00
	Total expenditures	$ 1,032,616.03

Appendix G
NCWRP Property Inventory

Property Inventory

The NCWRP manages more than 1,260 acres of wetlands and riparian buffers and 57,354 linear feet of stream habitat. The properties are listed in Appendix Table G-1. Three wetlands and riparian restoration projects within the N.C. Division of Parks and Recreation are near completion. Memoranda of agreements between the two state agencies ensure that these restored areas are protected in perpetuity by the park system. Two acres of non-riparian wetland at Hammocks Beach State Park and 10,622 linear feet of stream at Stone Mountain State Park were restored.

Excluding the land within state parks, the NCWRP has protected more than 1,232 acres of wetlands and 44,742 linear feet of streams in nine river basins throughout the state. The Program will monitor and protect the sites in perpetuity or will transfer the properties to local land trusts or other agencies for long-term management.

As the Program completes restoration projects, restored and protected wetland and riparian land will be added to the property inventory each year, contributing to the State's Million Acre Initiative.

Table G-1. Property Inventory of the North Carolina Wetlands Restoration Program

Property Name	County	River Basin	Area (acres, linear feet)	Type of Acquisition	Date Acquired
Barra Farms	Cumberland	Cape Fear	618 ac.	Easement	7/7/1998
Buckhead Creek	Cumberland	Cape Fear	4.6 ac.	Easement	6/18/1998
Price Park	Guilford	Cape Fear	3.31 ac. 1,700 linear ft.	Easement	7/22/1999
Brown Branch	Caldwell	Catawba	14 ac., 6500 linear ft.	Easement/ Allocation	5/15/2001
Wike	Catawba	Catawba	4 ac., 2300 linear ft.	Easement	2/28/2001
Payne Dairy	Alexander	Catawba	40.3 ac. 7,000 linear ft.	Purchased Easement	9/13/1999
Nucor Steel	Hertford	Chowan	150 ac.	Easement	11/2/1999
High Vista	Buncombe/ Henderson	French Broad	6.4 ac. 3,500 linear ft.	Easement	5/30/2001
Reed Creek	Buncombe	French Broad	1.32 ac.	Easement	2/23/2001
Clear Creek	Henderson	French Broad	6.4 ac. 1,300 linear ft.	Easement	10/5/2001
J&H Milling	Greene	Neuse	27.5 ac.	Easement	10/31/1999
Chavis Park	Wake	Neuse	4.6 ac., 2,500 linear ft.	MOA	11/30/2000
Kentwood Park	Wake	Neuse	5.5 ac., 3,000 linear ft.	MOA	11/30/2000
Bertie Creek	Wake	Neuse	2.2 ac., 1200 linear ft.	MOA	3/15/1999
William B. Umstead State Park	Wake	Neuse	1.4 ac 2,000 linear ft.	MOA with Division of Parks and Recreation	4/30/2000
Hominy Swamp	Wilson	Neuse	3.99 acres 2,232 linear ft.	Easement	5/22/2001
Smith-Austin Creeks	Wake	Neuse	36.75 ac. 9,500 linear ft.	Easement	9/7/2001
Howell Woods	Johnston	Neuse	139 ac.	Easement	7/15/1999
Brush Creek	Alleghany	New	7.8 ac., 4,000 linear ft.	Easement	1/6/2000
Gorham	Nash	Tar-Pamlico	46.5 ac.	Easement	3/28/1999
Sturgeon City	Onslow	White Oak	5 ac.	MOA	8/18/1999
Hammocks Beach State Park	Onslow	White Oak	2 ac.	MOA with Division of Parks and Recreation	
HPS&R	Onslow	White Oak	100 ac.	Easement	4/10/1999
Jumping Run	Carteret	White Oak	4.4 ac.	Easement	4/26/1999
Maritime Museum	Carteret	White Oak	1.14 ac.	Easement	5/29/2001
Stone Mountain State Park	Wilkes	Yadkin	10,622 linear ft., 24.38 ac.	MOA with Division of Parks and Recreation	5/5/1999
		TOTAL	57,354 linear ft., 1,260.49 acres		